



$$I(J^P) = \frac{1}{2}(0^-)$$

D⁰ MASS

The fit includes D^\pm , D^0 , D_s^\pm , $D^{*\pm}$, D^{*0} , $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^{*}(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT	
1864.86 ± 0.13 OUR FIT					NODE=S032M
1864.91 ± 0.17 OUR AVERAGE					NODE=S032M
1865.30 ± 0.33 ± 0.23	98 ± 13	ANASHIN	10A	KEDR $e^+ e^-$ at $\psi(3770)$	
1864.847 ± 0.150 ± 0.095	319 ± 18	CAWLFIELD	07	CLEO $D^0 \rightarrow K_S^0 \phi$	
1864.6 ± 0.3 ± 1.0	641	BARLAG	90C	ACCM π^- Cu 230 GeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1852 ± 7	16	ADAMOVICH	87	EMUL Photoproduction	
1856 ± 36	22	ADAMOVICH	84B	EMUL Photoproduction	
1861 ± 4		DERRICK	84	HRS $e^+ e^-$ 29 GeV	
1847 ± 7	1	FIORINO	81	EMUL $\gamma N \rightarrow \bar{D}^0 +$	
1863.8 ± 0.5		¹ SCHINDLER	81	MRK2 $e^+ e^-$ 3.77 GeV	
1864.7 ± 0.6		¹ TRILLING	81	RVUE $e^+ e^-$ 3.77 GeV	
1863.0 ± 2.5	238	ASTON	80E	OMEG $\gamma p \rightarrow \bar{D}^0$	
1860 ± 2	143	² AVERY	80	SPEC $\gamma N \rightarrow D^{*+}$	
1869 ± 4	35	² AVERY	80	SPEC $\gamma N \rightarrow D^{*+}$	
1854 ± 6	94	² ATIYA	79	SPEC $\gamma N \rightarrow D^0 \bar{D}^0$	OCCUR=2
1850 ± 15	64	BALTAY	78C	HBC $\nu N \rightarrow K^0 \pi \pi$	
1863 ± 3		GOLDHABER	77	MRK1 D^0, D^+ recoil spectra	
1863.3 ± 0.9		¹ PERUZZI	77	LGW $e^+ e^-$ 3.77 GeV	
1868 ± 11		PICCOLO	77	MRK1 $e^+ e^-$ 4.03, 4.41 GeV	
1865 ± 15	234	GOLDHABER	76	MRK1 $K\pi$ and $K3\pi$	
¹ PERUZZI 77 and SCHINDLER 81 errors do not include the 0.13% uncertainty in the absolute SPEAR energy calibration. TRILLING 81 uses the high precision $J/\psi(1S)$ and $\psi(2S)$ measurements of ZHOLENTZ 80 to determine this uncertainty and combines the PERUZZI 77 and SCHINDLER 81 results to obtain the value quoted. TRILLING 81 enters the fit in the D^\pm mass, and PERUZZI 77 and SCHINDLER 81 enter in the $m_{D^\pm} - m_{D^0}$, below.					
² Error does not include possible systematic mass scale shift, estimated to be less than 5 MeV.					

$m_{D^\pm} - m_{D^0}$

The fit includes D^\pm , D^0 , D_s^\pm , $D^{*\pm}$, D^{*0} , $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^{*}(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
4.76±0.10 OUR FIT	Error includes scale factor of 1.1.			NODE=S032DM
4.74±0.28 OUR AVERAGE				NODE=S032DM
4.7 ± 0.3	¹ SCHINDLER	81	MRK2 $e^+ e^-$ 3.77 GeV	
5.0 ± 0.8	¹ PERUZZI	77	LGW $e^+ e^-$ 3.77 GeV	

¹ See the footnote on TRILLING 81 in the D^0 and D^\pm sections on the mass.

D⁰ MEAN LIFE

Measurements with an error $> 10 \times 10^{-15}$ s have been omitted from the average.

VALUE (10^{-15} s)	EVTS	DOCUMENT ID	TECN	COMMENT	
410.1± 1.5 OUR AVERAGE					NODE=S032T
409.6 ± 1.1 ± 1.5	210k	LINK	02F	FOCS γ nucleus, ≈ 180 GeV	
407.9 ± 6.0 ± 4.3	10k	KUSHNIR...	01	SELX $K^- \pi^+, K^- \pi^+ \pi^-$	
413 ± 3 ± 4	35k	AITALA	99E	E791 $K^- \pi^+$	
408.5 ± 4.1 ± 3.5	25k	BONVICINI	99	CLE2 $e^+ e^- \approx \gamma(4S)$	
413 ± 4 ± 3	16k	FRABETTI	94D	E687 $K^- \pi^+, K^- \pi^+ \pi^-$	

• • • We do not use the following data for averages, fits, limits, etc. • • •

424	± 11	± 7	5118	FRABETTI	91	E687	$K^- \pi^+, K^- \pi^+ \pi^+ \pi^-$
417	± 18	± 15	890	ALVAREZ	90	NA14	$K^- \pi^+, K^- \pi^+ \pi^+ \pi^-$
388	± 23		641	¹ BARLAG	90C	ACCM	$\pi^- \text{Cu}$ 230 GeV
480	± 40	± 30	776	ALBRECHT	88I	ARG	$e^+ e^-$ 10 GeV
422	± 8	± 10	4212	RAAB	88	E691	Photoproduction
420	± 50		90	BARLAG	87B	ACCM	K^- and π^- 200 GeV

¹ BARLAG 90C estimate systematic error to be negligible.

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$$|m_{D_1^0} - m_{D_2^0}| = x \Gamma$$

The D_1^0 and D_2^0 are the mass eigenstates of the D^0 meson, as described in the note on “ D^0 - \bar{D}^0 Mixing,” above. The experiments usually present $x \equiv \Delta m/\Gamma$. Then $\Delta m = x \Gamma = x \hbar/\tau$.

“OUR EVALUATION” comes from averages provided by the Heavy Flavor Averaging Group, see the note on “ D^0 - \bar{D}^0 Mixing.”

VALUE ($10^{10} \text{ } \hbar \text{ s}^{-1}$)	CL%	DOCUMENT ID	TECN	COMMENT
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1.18^{+0.43}_{-0.47} OUR EVALUATION				
$[(1.44^{+0.48}_{-0.50}) \times 10^{10} \text{ } \hbar \text{ s}^{-1}$	OUR 2012 EVALUATION]			
1.0 ± 0.8 OUR AVERAGE	Error includes scale factor of 1.5.			
0.39 ± 0.56 ± 0.35	¹ AAIJ 13N LHCb pp at 7 TeV			
1.98 ± 0.73 ^{+0.32} _{-0.41}	² DEL-AMO-SA..10D BABR $e^+ e^-$, 10.6 GeV			
	³ ZHANG 07B BELL $\Delta m < 3.9$, 95% CL			

• • • We do not use the following data for averages, fits, limits, etc. • • •

6.4	± 1.4	± 1.0	⁴ AUBERT	09AN BABR	$e^+ e^-$ at 10.58 GeV
– 2	± 7	± 6	⁵ LOWREY	09 CLEO	$e^+ e^-$ at $\psi(3770)$
< 7		95	⁶ ZHANG	06 BELL	$e^+ e^-$
– 11	to +22		³ ASNER	05 CLEO	$e^+ e^- \approx 10$ GeV
< 11		90	⁷ BITENC	05 BELL	
< 30		90	⁸ CAWLFIELD	05 CLEO	
< 7		95	⁶ LI	05A BELL	See ZHANG 06
< 22		95	⁷ LINK	05H FOCS	γ nucleus
< 23		95	⁹ AUBERT	04Q BABR	
< 11		95	⁶ AUBERT	03Z BABR	$e^+ e^-$, 10.6 GeV
< 7		95	⁸ GODANG	00 CLE2	$e^+ e^-$
< 32		90	^{9,10} AITALA	98 E791	π^- nucleus, 500 GeV
< 24		90	¹¹ AITALA	96C E791	π^- nucleus, 500 GeV
< 21		90	^{10,12} ANJOS	88C E691	Photoproduction

¹ Based on 1 fb^{-1} of data collected at $\sqrt{s} = 7$ TeV in 2011. Assumes no CP violation. Reported $x'^2 = (-0.9 \pm 1.3) \times 10^{-4}$ and $y' = (7.2 \pm 2.4) \times 10^{-3}$, where $x' = x \cos(\delta) + y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$.

² DEL-AMO-SANCHEZ 10D uses $540,800 \pm 800 K_S^0 \pi^+ \pi^-$ and $79,900 \pm 300 K_S^0 K^+ K^-$ events in a time-dependent amplitude analysis of the D^0 and \bar{D}^0 Dalitz plots. No evidence was found for CP violation, and the values here assume no such violation.

³ The ASNER 05 and ZHANG 07B values are from the time-dependent Dalitz-plot analysis of $D^0 \rightarrow K_S^0 \pi^+ \pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$. This value allows CP violation and is sensitive to the sign of Δm .

⁴ The AUBERT 09AN values are inferred from the branching ratio $\Gamma(D^0 \rightarrow K^+ \pi^- \pi^0$ via $\bar{D}^0)/\Gamma(D^0 \rightarrow K^- \pi^+ \pi^0)$ given near the end of this Listings. Mixing is distinguished from DCS decays using decay-time information. Interference between mixing and DCS is allowed. The phase between $D^0 \rightarrow K^+ \pi^- \pi^0$ and $\bar{D}^0 \rightarrow K^+ \pi^- \pi^0$ is assumed to be small. The width difference here is y'' , which is not the same as y_{CP} in the note on D^0 - \bar{D}^0 mixing.

⁵ LOWREY 09 uses quantum correlations in $e^+ e^- \rightarrow D^0 \bar{D}^0$ at the $\psi(3770)$. See below for coherence factors and average relative strong phases for both $D^0 \rightarrow K^- \pi^+ \pi^0$

NODE=S032T;LINKAGE=BL

NODE=S032209

NODE=S032D

NODE=S032D

NODE=S032D

NEW

NODE=S032D;LINKAGE=AI

NODE=S032D;LINKAGE=DE

NODE=S032D;LINKAGE=AS

NODE=S032D;LINKAGE=AR

NODE=S032D;LINKAGE=LO

and $D^0 \rightarrow K^- \pi^- 2\pi^+$. A fit that includes external measurements of charm mixing parameters gets $\Delta m = (2.34 \pm 0.61) \times 10^{10} \text{ } \text{h s}^{-1}$.

⁶The AUBERT 03Z, LI 05A, and ZHANG 06 limits are inferred from the D^0 - \bar{D}^0 mixing ratio $\Gamma(K^+ \pi^- \text{ (via } \bar{D}^0)) / \Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0 - \bar{D}^0 mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. AUBERT 03Z assumes the strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$ amplitudes is small; if an arbitrary phase is allowed, the limit degrades by 20%. The LI 05A and ZHANG 06 limits are valid for an arbitrary strong phase.

⁷This LINK 05H limit is inferred from the D^0 - \bar{D}^0 mixing ratio $\Gamma(K^+ \pi^- \text{ (via } \bar{D}^0)) / \Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0 - \bar{D}^0 mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. The strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$ is assumed to be small. If an arbitrary relative strong phase is allowed, the limit degrades by 25%.

⁸This GODANG 00 limit is inferred from the D^0 - \bar{D}^0 mixing ratio $\Gamma(K^+ \pi^- \text{ (via } \bar{D}^0)) / \Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from D^0 - \bar{D}^0 mixing. The limit allows interference between the DCS and mixing ratios, and also allows CP violation. The strong phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$ is assumed to be small. If an arbitrary relative strong phase is allowed, the limit degrades by a factor of two.

⁹AITALA 98 allows interference between the doubly Cabibbo-suppressed and mixing amplitudes, and also allows CP violation in this term, but assumes that $A_D = A_R = 0$. See the note on " D^0 - \bar{D}^0 Mixing," above.

¹⁰This limit is inferred from R_M for $f = K^+ \pi^-$ and $f = K^+ \pi^- \pi^+ \pi^-$. See the note on " D^0 - \bar{D}^0 Mixing," above. Decay-time information is used to distinguish doubly Cabibbo-suppressed decays from D^0 - \bar{D}^0 mixing.

¹¹This limit is inferred from R_M for $f = K^+ \ell^- \bar{\nu}_\ell$. See the note on " D^0 - \bar{D}^0 Mixing," above.

¹²ANJOS 88C assumes that $y = 0$. See the note on " D^0 - \bar{D}^0 Mixing," above. Without this assumption, the limit degrades by about a factor of two.

$$(\Gamma_{D_1^0} - \Gamma_{D_2^0}) / \Gamma = 2y$$

The D_1^0 and D_2^0 are the mass eigenstates of the D^0 meson, as described in the note on " D^0 - \bar{D}^0 Mixing," above.

Due to the strong phase difference between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$, we exclude from the average those measurements of y' that are inferred from the D^0 - \bar{D}^0 mixing ratio $\Gamma(K^+ \pi^- \text{ via } \bar{D}^0) / \Gamma(K^+ \pi^-)$ given near the end of this D^0 Listings.

Some early results have been omitted. See our 2006 Review (Journal of Physics, G **33** 1 (2006)).

"OUR EVALUATION" comes from averages provided by the Heavy Flavor Averaging Group, see the note on " D^0 - \bar{D}^0 Mixing."

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
1.43 ± 0.19 OUR EVALUATION [($1.60^{+0.25}_{-0.26}$) $\times 10^{-2}$ OUR 2012 EVALUATION]				
1.21 ± 0.25 OUR AVERAGE [(1.36 ± 0.33) $\times 10^{-2}$ OUR 2012 AVERAGE Scale factor = 1.3]				
1.44 \pm 0.36 \pm 0.24	2 LEES	13N LHCb	$p p$ at 7 TeV	
0.55 \pm 0.63 \pm 0.41	3 AAIJ	12K LHCb	$p p$ at 7 TeV	
1.14 \pm 0.40 \pm 0.30	4 DEL-AMO-SA..10D	BABR	$e^+ e^-$, 10.6 GeV	
0.22 \pm 1.22 \pm 1.04	5 ZUPANC	09 BELL	$e^+ e^- \approx \gamma(4S)$	
2.62 \pm 0.64 \pm 0.50	160k	6 STARIC	$e^+ e^- \approx \gamma(4S)$	
0.74 \pm 0.50 \pm 0.20	534k	7 ZHANG	$e^+ e^- \approx \gamma(4S)$	
-1.0 \pm 2.0 \pm 1.4	18k	8 ABE	$e^+ e^- \approx \gamma(4S)$	
-2.4 \pm 5.0 \pm 2.8	3393	9 CSORNA	$e^+ e^- \approx \gamma(4S)$	
6.84 \pm 2.78 \pm 1.48	10k	8 LINK	00 FOCS γ nucleus	
+1.6 \pm 5.8 \pm 2.1		8 AITALA	99E E791 $K^- \pi^+, K^+ K^-$	

NODE=S032D;LINKAGE=AU

NODE=S032D;LINKAGE=LI

NODE=S032D;LINKAGE=GD

NODE=S032D;LINKAGE=AT

NODE=S032D;LINKAGE=C

NODE=S032D;LINKAGE=FG

NODE=S032D;LINKAGE=DC

NODE=S032DT

NODE=S032DT

NODE=S032DT

NEW

NEW

• • • We do not use the following data for averages, fits, limits, etc. • • •

$2.32 \pm 0.44 \pm 0.36$	¹⁰ AUBERT	09AI BABR	See LEES 13
$-0.12^{+1.10}_{-1.28} \pm 0.68$	¹¹ AUBERT	09AN BABR	$e^+ e^-$ at 10.58 GeV
$1.4^{+4.8}_{-5.4}$	¹² LOWREY	09 CLEO	$e^+ e^-$ at $\psi(3770)$
1.70 ± 1.52	¹³ AALTONEN	08E CDF	$p\bar{p}, \sqrt{s} = 1.96$ TeV
$2.06 \pm 0.66 \pm 0.38$	¹⁴ AUBERT	08U BABR	See AUBERT 09AI
$1.94 \pm 0.88 \pm 0.62$	¹³ AUBERT	07W BABR	$e^+ e^- \approx 10.6$ GeV
-0.7 ± 4.9	^{13,15} ZHANG	06 BELL	$e^+ e^-$
$-3.0^{+5.0}_{-4.8}^{+1.6}_{-0.8}$	⁷ ASNER	05 CLEO	$e^+ e^- \approx 10$ GeV
-0.3 ± 5.7	^{13,15} LI	05A BELL	See ZHANG 06
$-5.2^{+18.4}_{-16.8}$	^{13,15} LINK	05H FOCS	γ nucleus
$1.6 \pm 0.8^{+1.0}_{-0.8}$	^{450k} AUBERT	03P BABR	See AUBERT 08U
$1.6^{+6.2}_{-12.8}$	^{13,15} AUBERT	03Z BABR	$e^+ e^-$, 10.6 GeV
$-5.0^{+2.8}_{-3.2} \pm 0.6$	¹³ GODANG	00 CLE2	$e^+ e^-$

1 Based on 1 fb^{-1} of data collected at $\sqrt{s} = 7$ TeV in 2011. Assumes no CP violation. Reported $x'^2 = (-0.9 \pm 1.3) \times 10^{-4}$ and $y' = (7.2 \pm 2.4) \times 10^{-3}$, where $x' = x \cos(\delta)$ + $y \sin(\delta)$, $y' = y \cos(\delta) - x \sin(\delta)$ and δ is the strong phase between the $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$.

2 Obtained $y_{CP} = (0.72 \pm 0.18 \pm 0.12)\%$ based on three effective D^0 lifetimes measured in $K^{\mp} \pi^{\pm}$, $K^- K^+$, and $\pi^- \pi^+$. We list $2y_{CP} = \Delta\Gamma/\Gamma$.

3 Compared the lifetimes of D^0 decay to the CP eigenstate $K^+ K^-$ with D^0 decay to $\pi^+ K^-$. The values here assume no CP violation.

4 DEL-AMO-SANCHEZ 10D uses $540,800 \pm 800 K_S^0 \pi^+ \pi^-$ and $79,900 \pm 300 K_S^0 K^+ K^-$ events in a time-dependent amplitude analyses of the D^0 and \bar{D}^0 Dalitz plots. No evidence was found for CP violation, and the values here assume no such violation.

5 ZUPANC 09 uses a method based on measuring the mean decay time of $D^0 \rightarrow K_S^0 K^+ K^-$ events for different $K^+ K^-$ mass intervals.

6 STARIC 07 compares the lifetimes of D^0 decay to the CP eigenstates $K^+ K^-$ and $\pi^+ \pi^-$ with D^0 decay to $K^- \pi^+$.

7 The ASNER 05 and ZHANG 07B values are from the time-dependent Dalitz-plot analysis of $D^0 \rightarrow K_S^0 \pi^+ \pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^{*+} \pi^-$ and $\bar{D}^0 \rightarrow K^{*+} \pi^-$. This limit allows CP violation.

8 LINK 00, AITALA 99E, and ABE 02I measure the lifetime difference between $D^0 \rightarrow K^- K^+$ (CP even) decays and $D^0 \rightarrow K^- \pi^+$ (CP mixed) decays, or $y_{CP} = [\Gamma(CP+) - \Gamma(CP-)] / [\Gamma(CP+) + \Gamma(CP-)]$. We list $2y_{CP} = \Delta\Gamma/\Gamma$.

9 CSORNA 02 measures the lifetime difference between $D^0 \rightarrow K^- K^+$ and $\pi^- \pi^+$ (CP even) decays and $D^0 \rightarrow K^- \pi^+$ (CP mixed) decays, or $y_{CP} = [\Gamma(CP+) - \Gamma(CP-)] / [\Gamma(CP+) + \Gamma(CP-)]$. We list $2y_{CP} = \Delta\Gamma/\Gamma$.

10 This combines the $y_{CP} = (\tau_{K\pi}/\tau_{KK}) - 1$ using untagged $K^- \pi^+$ and $K^- K^+$ events of AUBERT 09AI with the disjoint y_{CP} using tagged $K^- \pi^+$, $K^- K^+$, and $\pi^- \pi^+$ events of AUBERT 08U.

11 The AUBERT 09AN values are inferred from the branching ratio $\Gamma(D^0 \rightarrow K^+ \pi^- \pi^0)$ via $\bar{D}^0)/\Gamma(D^0 \rightarrow K^- \pi^+ \pi^0)$ given near the end of this Listings. Mixing is distinguished from DCS decays using decay-time information. Interference between mixing and DCS is allowed. The phase between $D^0 \rightarrow K^+ \pi^- \pi^0$ and $\bar{D}^0 \rightarrow K^+ \pi^- \pi^0$ is assumed to be small. The width difference here is y'' , which is not the same as y_{CP} in the note on $D^0-\bar{D}^0$ mixing.

12 LOWREY 09 uses quantum correlations in $e^+ e^- \rightarrow D^0 \bar{D}^0$ at the $\psi(3770)$. See below for coherence factors and average relative strong phases for both $D^0 \rightarrow K^- \pi^+ \pi^0$ and $D^0 \rightarrow K^- \pi^- 2\pi^+$. A fit that includes external measurements of charm mixing parameters gets $2y = (1.62 \pm 0.32) \times 10^{-2}$.

13 The GODANG 00, AUBERT 03Z, LINK 05H, LI 05A, ZHANG 06, AUBERT 07W, and AALTONEN 08E limits are inferred from the $D^0-\bar{D}^0$ mixing ratio $\Gamma(K^+ \pi^-)$ (via $\bar{D}^0))/\Gamma(K^- \pi^+)$ given near the end of this D^0 Listings. Decay-time information is used to distinguish DCS decays from $D^0-\bar{D}^0$ mixing. The limits allow interference between the DCS and mixing ratios, and all except AUBERT 07W and AALTONEN 08E also allow CP violation. The phase between $D^0 \rightarrow K^+ \pi^-$ and $\bar{D}^0 \rightarrow K^+ \pi^-$ is assumed to be small. This is a measurement of y' and is not the same as the y_{CP} of our note above on $D^0-\bar{D}^0$ Mixing."

14 This value combines the results of AUBERT 08U and AUBERT 03P.

NODE=S032DT;LINKAGE=AI

NODE=S032DT;LINKAGE=LE

NODE=S032DT;LINKAGE=AA

NODE=S032DT;LINKAGE=DE

NODE=S032DT;LINKAGE=ZU

NODE=S032DT;LINKAGE=ST

NODE=S032DT;LINKAGE=AS

NODE=S032DT;LINKAGE=LK

NODE=S032DT;LINKAGE=CK

NODE=S032DT;LINKAGE=AE

NODE=S032DT;LINKAGE=AR

NODE=S032DT;LINKAGE=LO

NODE=S032DT;LINKAGE=GD

NODE=S032DT;LINKAGE=BE

15 The ranges of AUBERT 03Z, LINK 05H, LI 05A, and ZHANG 06 measurements are for 95% confidence level.

16 AUBERT 03P measures $Y \equiv 2\tau^0 / (\tau^+ + \tau^-) - 1$, where τ^0 is the $D^0 \rightarrow K^-\pi^+$ (and $D^0 \rightarrow K^+\pi^-$) lifetime, and τ^+ and τ^- are the D^0 and \bar{D}^0 lifetimes to CP -even states (here K^-K^+ and $\pi^-\pi^+$). In the limit of CP conservation, $Y = y \equiv \Delta\Gamma / 2\Gamma$ (we list $2y = \Delta\Gamma/\Gamma$). AUBERT 03P also uses $\tau^+ - \tau^-$ to get $\Delta Y = -0.008 \pm 0.006 \pm 0.002$.

$|q/p|$

The mass eigenstates D_1^0 and D_2^0 are related to the $C = \pm 1$ states by $|D_{1,2}\rangle = p|D^0\rangle + q|\bar{D}^0\rangle$. See the note on " $D^0-\bar{D}^0$ Mixing" above.

"OUR EVALUATION" comes from averages provided by the Heavy Flavor Averaging Group. This would include as-yet-unpublished results, see the note on " $D^0-\bar{D}^0$ Mixing."

VALUE	DOCUMENT ID	TECN	COMMENT
0.67^{+0.18}_{-0.14} OUR EVALUATION	HFAG fit; see the note on " $D^0-\bar{D}^0$ Mixing."		
[0.88 ^{+0.16} _{-0.15} OUR 2012 EVALUATION]			

0.86^{+0.30}_{-0.29}^{+0.10}_{-0.08}	1 ZHANG	07B BELL	$e^+e^- \approx \gamma(4S)$
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1 The phase of p/q is $(-14^{+16}_{-18} \pm 5)^\circ$. The ZHANG 07B value is from the time-dependent Dalitz-plot analysis of $D^0 \rightarrow K_S^0\pi^+\pi^-$. Decay-time information and interference on the Dalitz plot are used to distinguish doubly Cabibbo-suppressed decays from mixing and to measure the relative phase between $D^0 \rightarrow K^+\pi^-$ and $D^0 \rightarrow K^*\pi^-$. This value allows CP violation.

A_Γ

A_Γ is the decay-rate asymmetry for CP -even final states $A_\Gamma = (\bar{\tau}_+ - \tau_+) / (\bar{\tau}_+ + \tau_+)$. See the note on " $D^0-\bar{D}^0$ Mixing" above.

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
-0.22^{+1.61}_{-1.61} OUR EVALUATION			

[$(0.26 \pm 2.31) \times 10^{-3}$ OUR 2012 EVALUATION]

-0.1 ± 2.1 OUR AVERAGE

[$(0.3 \pm 2.5) \times 10^{-3}$ OUR 2012 AVERAGE]

0.9 $\pm 2.6 \pm 0.6$	LEES	13 BABR	$e^+e^- \rightarrow \gamma(4S)$
-5.9 $\pm 5.9 \pm 2.1$	AAIJ	12K LHCb	pp at 7 TeV
0.1 $\pm 3.0 \pm 2.5$	STARIC	07 BELL	$e^+e^- \approx \gamma(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
2.6 $\pm 3.6 \pm 0.8$	AUBERT	08U BABR	See LEES 13
8 $\pm 6 \pm 2$	AUBERT	03P BABR	$e^+e^- \approx \gamma(4S)$

$\cos \delta$

δ is the $D^0 \rightarrow K^+\pi^-$ relative strong phase.

VALUE	DOCUMENT ID	TECN	COMMENT
0.81^{+0.23}_{-0.19} OUR AVERAGE	[$1.03^{+0.32}_{-0.18}$ OUR 2012 AVERAGE]		

0.81^{+0.22}_{-0.18}^{+0.07}_{-0.05}	1 ASNER	12 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$, 3.77 GeV
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• • • We do not use the following data for averages, fits, limits, etc. • • •

1.03 ^{+0.31} _{-0.17} ^{± 0.06}	2 ASNER	08 CLEO	Repl. by ASNER 12
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1 Uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where decay rates of CP -tagged $K\pi$ final states depend on the strong phases between the decays of $D^0 \rightarrow K^+\pi^-$ and $\bar{D}^0 \rightarrow K^+\pi^-$. The measurements obtained $\sin(\delta) = -0.01 \pm 0.41 \pm 0.04$ and $|\delta| = (10^{+28}_{-53}{}^{+13}_{-00})^\circ$ as well. A fit that includes external measurements of charm mixing parameters finds $\cos(\delta) = 1.15^{+0.19}_{-0.17}{}^{+0.00}_{-0.08}$, $\sin(\delta) = 0.56^{+0.32}_{-0.31}{}^{+0.21}_{-0.20}$, and $|\delta| = (18^{+11}_{-17})^\circ$.

2 ASNER 08 uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where decay rates of CP -tagged $K\pi$ final states depend on $\cos \delta$ because of interfering amplitudes. The above measurement implies $|\delta| < 75^\circ$ with a confidence level of 95%. A fit that includes external measurements of charm mixing parameters finds $\cos \delta = 1.10 \pm 0.35 \pm 0.07$. See also the note on " $D^0-\bar{D}^0$ Mixing" p. 783 in our 2008 Review (PDG 08).

NODE=S032DT;LINKAGE=AB

NODE=S032DT;LINKAGE=AU

NODE=S032QP

NODE=S032QP

NODE=S032QP

NEW

NODE=S032QP;LINKAGE=ZH

NODE=S032AG

NODE=S032AG

NODE=S032AG

NEW

NODE=S032DKP

NODE=S032DKP

NODE=S032DKP

NEW

NODE=S032DKP;LINKAGE=AN

NODE=S032DKP;LINKAGE=AS

$D^0 \rightarrow K^-\pi^+\pi^0$ COHERENCE FACTOR $R_{K\pi\pi^0}$

See the note on ' D^0 - \bar{D}^0 Mixing' for the definition. $R_{K\pi\pi^0}$ can have any value between 0 and 1. A value near 1 indicates the decay is dominated by a few intermediate states with limited interference.

VALUE	DOCUMENT ID	TECN	COMMENT
0.78^{+0.11}_{-0.25}	1 LOWREY	09 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at $\psi(3770)$

¹ LOWREY 09 uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. A fit that includes external measurements of charm mixing parameters gets $R_{K\pi\pi^0} = 0.84 \pm 0.07$.

 $D^0 \rightarrow K^-\pi^+\pi^0$ AVERAGE RELATIVE STRONG PHASE $\delta^{K\pi\pi^0}$

VALUE (°)	DOCUMENT ID	TECN	COMMENT
239⁺³²₋₂₈	1 LOWREY	09 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at $\psi(3770)$

¹ LOWREY 09 uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^+\pi^0$ final states depend on $R_{K\pi\pi^0}$ and $\delta^{K\pi\pi^0}$. A fit that includes external measurements of charm mixing parameters gets $\delta^{K\pi\pi^0} = (227^{+14})_-^{17}$ °.

 $D^0 \rightarrow K^-\pi^-2\pi^+$ COHERENCE FACTOR $R_{K3\pi}$

See the note on ' D^0 - \bar{D}^0 Mixing' for the definition. $R_{K3\pi}$ can have any value between 0 and 1. A value near 1 indicates the decay is dominated by a few intermediate states with limited interference.

VALUE	DOCUMENT ID	TECN	COMMENT
0.36^{+0.24}_{-0.30}	1 LOWREY	09 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at $\psi(3770)$

¹ LOWREY 09 uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^-2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$. A fit that includes external measurements of charm mixing parameters gets $R_{K3\pi} = 0.33^{+0.26}_{-0.23}$.

 $D^0 \rightarrow K^-\pi^-2\pi^+$ AVERAGE RELATIVE STRONG PHASE $\delta^{K3\pi}$

VALUE (°)	DOCUMENT ID	TECN	COMMENT
118⁺⁶²₋₅₃	1 LOWREY	09 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at $\psi(3770)$

¹ LOWREY 09 uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the decay rates of CP-tagged $K^-\pi^-2\pi^+$ final states depend on $R_{K3\pi}$ and $\delta^{K3\pi}$. A fit that includes external measurements of charm mixing parameters gets $\delta^{K3\pi} = (114^{+26})_-^{23}$ °.

 $D^0 \rightarrow K_S^0 K^+\pi^-$ COHERENCE FACTOR $R_{K_S^0 K\pi}$

VALUE	DOCUMENT ID	TECN	COMMENT
0.73^{+0.08}	1 INSLER	12 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at 3.77 GeV

¹ Uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K_S^0 K\pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$.

 $D^0 \rightarrow K_S^0 K^+\pi^-$ AVERAGE RELATIVE STRONG PHASE $\delta^{K_S^0 K\pi}$

VALUE (°)	DOCUMENT ID	TECN	COMMENT
8.3^{+15.2}	1 INSLER	12 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at 3.77 GeV

¹ Uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K_S^0 K\pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$.

 $D^0 \rightarrow K^*K$ COHERENCE FACTOR R_{K^*K}

VALUE	DOCUMENT ID	TECN	COMMENT
1.00^{+0.16}	1 INSLER	12 CLEO	$e^+e^- \rightarrow D^0\bar{D}^0$ at 3.77 GeV

¹ Uses quantum correlations in $e^+e^- \rightarrow D^0\bar{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K_S^0 K\pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$.

NODE=S032CF1

NODE=S032CF1

NODE=S032CF1

NODE=S032CF1;LINKAGE=LO

NODE=S032SP1

NODE=S032SP1

NODE=S032SP1;LINKAGE=LO

NODE=S032CF2

NODE=S032CF2

NODE=S032CF2

NODE=S032CF2;LINKAGE=LO

NODE=S032SP2

NODE=S032SP2

NODE=S032SP2;LINKAGE=LO

NODE=S032CF3

NODE=S032CF3

NODE=S032CF3;LINKAGE=IN

NODE=S032SP3

NODE=S032SP3

NODE=S032SP3;LINKAGE=IN

NODE=S032CF4

NODE=S032CF4

NODE=S032CF4;LINKAGE=IN

$D^0 \rightarrow K^* K$ AVERAGE RELATIVE STRONG PHASE $\delta^{K^* K}$

VALUE (°)	DOCUMENT ID	TECN	COMMENT
26.5±15.8	1 INSLER	12 CLEO	$e^+ e^- \rightarrow D^0 \bar{D}^0$ at 3.77 GeV
1 Uses quantum correlations in $e^+ e^- \rightarrow D^0 \bar{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K_S^0 K\pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$.			

 D^0 DECAY MODES

Most decay modes (other than the semileptonic modes) that involve a neutral K meson are now given as K_S^0 modes, not as \bar{K}^0 modes. Nearly always it is a K_S^0 that is measured, and interference between Cabibbo-allowed and doubly Cabibbo-suppressed modes can invalidate the assumption that $2\Gamma(K_S^0) = \Gamma(\bar{K}^0)$.

Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
Topological modes			
$\Gamma_1 D^0 \rightarrow 0\text{-prongs}$	[a] (15 ± 6) %		NODE=S032;CLUMP=P
$\Gamma_2 D^0 \rightarrow 2\text{-prongs}$	(70 ± 6) %		DESIG=332
$\Gamma_3 D^0 \rightarrow 4\text{-prongs}$	[b] (14.5 ± 0.5) %		DESIG=333
$\Gamma_4 D^0 \rightarrow 6\text{-prongs}$	[c] (6.4 ± 1.3) × 10 ⁻⁴		DESIG=334
			DESIG=335
Inclusive modes			
$\Gamma_5 D^0 \rightarrow e^+$ anything	[d] (6.49 ± 0.11) %		NODE=S032;CLUMP=A
$\Gamma_6 D^0 \rightarrow \mu^+$ anything	(6.7 ± 0.6) %		DESIG=10
$\Gamma_7 D^0 \rightarrow K^-$ anything	(54.7 ± 2.8) %	S=1.3	DESIG=27
$\Gamma_8 D^0 \rightarrow \bar{K}^0$ anything + K^0 anything	(47 ± 4) %		DESIG=11
			DESIG=13
$\Gamma_9 D^0 \rightarrow K^+$ anything	(3.4 ± 0.4) %		DESIG=12
$\Gamma_{10} D^0 \rightarrow K^*(892)^-$ anything	(15 ± 9) %		DESIG=340
$\Gamma_{11} D^0 \rightarrow \bar{K}^*(892)^0$ anything	(9 ± 4) %		DESIG=312
$\Gamma_{12} D^0 \rightarrow K^*(892)^+$ anything	< 3.6 %	CL=90%	DESIG=341
$\Gamma_{13} D^0 \rightarrow K^*(892)^0$ anything	(2.8 ± 1.3) %		DESIG=313
$\Gamma_{14} D^0 \rightarrow \eta$ anything	(9.5 ± 0.9) %		DESIG=21
$\Gamma_{15} D^0 \rightarrow \eta'$ anything	(2.48 ± 0.27) %		DESIG=342
$\Gamma_{16} D^0 \rightarrow \phi$ anything	(1.05 ± 0.11) %		DESIG=249
Semileptonic modes			
$\Gamma_{17} D^0 \rightarrow K^- \ell^+ \nu_\ell$			NODE=S032;CLUMP=B
$\Gamma_{18} D^0 \rightarrow K^- e^+ \nu_e$	(3.55 ± 0.05) %	S=1.2	DESIG=196
$\Gamma_{19} D^0 \rightarrow K^- \mu^+ \nu_\mu$	(3.31 ± 0.13) %		DESIG=46
$\Gamma_{20} D^0 \rightarrow K^*(892)^- e^+ \nu_e$	(2.16 ± 0.16) %		DESIG=77
$\Gamma_{21} D^0 \rightarrow K^*(892)^- \mu^+ \nu_\mu$	(1.91 ± 0.24) %		DESIG=129
$\Gamma_{22} D^0 \rightarrow K^- \pi^0 e^+ \nu_e$	(1.6 ± 1.3) %		DESIG=307
$\Gamma_{23} D^0 \rightarrow \bar{K}^0 \pi^- e^+ \nu_e$	(2.7 ± 0.9) %		DESIG=127
$\Gamma_{24} D^0 \rightarrow K^- \pi^+ \pi^- e^+ \nu_e$	(2.8 ± 1.4) × 10 ⁻⁴		DESIG=128
$\Gamma_{25} D^0 \rightarrow K_1(1270)^- e^+ \nu_e$	(7.6 ± 4.0) × 10 ⁻⁴		DESIG=360
$\Gamma_{26} D^0 \rightarrow K^- \pi^+ \pi^- \mu^+ \nu_\mu$	< 1.2 × 10 ⁻³	CL=90%	DESIG=361
$\Gamma_{27} D^0 \rightarrow (\bar{K}^*(892)\pi)^- \mu^+ \nu_\mu$	< 1.4 × 10 ⁻³	CL=90%	DESIG=183
$\Gamma_{28} D^0 \rightarrow \pi^- e^+ \nu_e$	(2.89 ± 0.08) × 10 ⁻³	S=1.1	DESIG=184
$\Gamma_{29} D^0 \rightarrow \pi^- \mu^+ \nu_\mu$	(2.37 ± 0.24) × 10 ⁻³		DESIG=49
$\Gamma_{30} D^0 \rightarrow \rho^- e^+ \nu_e$	(1.9 ± 0.4) × 10 ⁻³		DESIG=308
			DESIG=320

Hadronic modes with one \bar{K}				
Γ_{31}	$D^0 \rightarrow K^- \pi^+$	(3.88 \pm 0.05) %	S=1.1	NODE=S032;CLUMP=C
Γ_{32}	$D^0 \rightarrow K^+ \pi^-$	(1.37 \pm 0.06) $\times 10^{-4}$		DESIG=1
Γ_{33}	$D^0 \rightarrow K_S^0 \pi^0$	(1.19 \pm 0.04) %		DESIG=404
Γ_{34}	$D^0 \rightarrow K_L^0 \pi^0$	(10.0 \pm 0.7) $\times 10^{-3}$		DESIG=9
Γ_{35}	$D^0 \rightarrow K_S^0 \pi^+ \pi^-$	[e] (2.83 \pm 0.20) %	S=1.1	DESIG=363
Γ_{36}	$D^0 \rightarrow K_S^0 \rho^0$	(6.3 \pm 0.7) $\times 10^{-3}$		DESIG=3
Γ_{37}	$D^0 \rightarrow K_S^0 \omega, \omega \rightarrow \pi^+ \pi^-$	(2.1 \pm 0.6) $\times 10^{-4}$		DESIG=285
Γ_{38}	$D^0 \rightarrow K_S^0 (\pi^+ \pi^-)_{S\text{-wave}}$	(3.4 \pm 0.8) $\times 10^{-3}$		DESIG=384
Γ_{39}	$D^0 \rightarrow K_S^0 f_0(980), f_0(980) \rightarrow \pi^+ \pi^-$	(1.22 \pm 0.40) $\times 10^{-3}$		DESIG=199
Γ_{40}	$D^0 \rightarrow K_S^0 f_0(1370), f_0(1370) \rightarrow \pi^+ \pi^-$	(2.8 \pm 0.9) $\times 10^{-3}$		DESIG=201
Γ_{41}	$D^0 \rightarrow K_S^0 f_2(1270), f_2(1270) \rightarrow \pi^+ \pi^-$	(9 \pm 10) $\times 10^{-5}$		DESIG=200
Γ_{42}	$D^0 \rightarrow K^*(892)^- \pi^+, K^*(892)^- \rightarrow K_S^0 \pi^-$	(1.66 \pm 0.15) %		DESIG=81
Γ_{43}	$D^0 \rightarrow K_0^*(1430)^- \pi^+, K_0^*(1430)^- \rightarrow K_S^0 \pi^-$	(2.70 \pm 0.40) $\times 10^{-3}$		DESIG=203
Γ_{44}	$D^0 \rightarrow K_2^*(1430)^- \pi^+, K_2^*(1430)^- \rightarrow K_S^0 \pi^-$	(3.4 \pm 1.9) $\times 10^{-4}$		DESIG=286
Γ_{45}	$D^0 \rightarrow K^*(1680)^- \pi^+, K^*(1680)^- \rightarrow K_S^0 \pi^-$	(4 \pm 4) $\times 10^{-4}$		DESIG=279
Γ_{46}	$D^0 \rightarrow K^*(892)^+ \pi^-, K^*(892)^+ \rightarrow K_S^0 \pi^+$	[f] (1.14 \pm 0.60) $\times 10^{-4}$		DESIG=179
Γ_{47}	$D^0 \rightarrow K_0^*(1430)^+ \pi^-, K_0^*(1430)^+ \rightarrow K_S^0 \pi^+$	[f] < 1.4 $\times 10^{-5}$ CL=95%		DESIG=382
Γ_{48}	$D^0 \rightarrow K_2^*(1430)^+ \pi^-, K_2^*(1430)^+ \rightarrow K_S^0 \pi^+$	[f] < 3.4 $\times 10^{-5}$ CL=95%		DESIG=383
Γ_{49}	$D^0 \rightarrow K_S^0 \pi^+ \pi^- \text{ nonresonant}$	(2.5 \pm 6.0) $\times 10^{-4}$		DESIG=33
Γ_{50}	$D^0 \rightarrow K^- \pi^+ \pi^0$	[e] (13.9 \pm 0.5) %	S=1.7	DESIG=8
Γ_{51}	$D^0 \rightarrow K^- \rho^+$	(10.8 \pm 0.7) %		DESIG=16
Γ_{52}	$D^0 \rightarrow K^- \rho(1700)^+, \rho(1700)^+ \rightarrow \pi^+ \pi^0$	(7.9 \pm 1.7) $\times 10^{-3}$		DESIG=271
Γ_{53}	$D^0 \rightarrow K^*(892)^- \pi^+, K^*(892)^- \rightarrow K^- \pi^0$	(2.22 \pm 0.40) %		DESIG=83
Γ_{54}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^0, \bar{K}^*(892)^0 \rightarrow K^- \pi^+$	(1.88 \pm 0.23) %		DESIG=82
Γ_{55}	$D^0 \rightarrow K_0^*(1430)^- \pi^+, K_0^*(1430)^- \rightarrow K^- \pi^0$	(4.6 \pm 2.1) $\times 10^{-3}$		DESIG=272
Γ_{56}	$D^0 \rightarrow \bar{K}_0^*(1430)^0 \pi^0, \bar{K}_0^*(1430)^0 \rightarrow K^- \pi^+$	(5.7 \pm 5.0) $\times 10^{-3}$		DESIG=273
Γ_{57}	$D^0 \rightarrow K^*(1680)^- \pi^+, K^*(1680)^- \rightarrow K^- \pi^0$	(1.8 \pm 0.7) $\times 10^{-3}$		DESIG=274
Γ_{58}	$D^0 \rightarrow K^- \pi^+ \pi^0 \text{ nonresonant}$	(1.11 \pm 0.50) %		DESIG=32
Γ_{59}	$D^0 \rightarrow K_S^0 2\pi^0$	(9.1 \pm 1.1) $\times 10^{-3}$	S=2.2	DESIG=185
Γ_{60}	$D^0 \rightarrow K_S^0 (2\pi^0)\text{-}S\text{-wave}$	(2.6 \pm 0.7) $\times 10^{-3}$		DESIG=390
Γ_{61}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^0, \bar{K}^*(892)^0 \rightarrow K_S^0 \pi^0$	(7.8 \pm 0.7) $\times 10^{-3}$		DESIG=202
Γ_{62}	$D^0 \rightarrow \bar{K}^*(1430)^0 \pi^0, \bar{K}^{*0} \rightarrow K_S^0 \pi^0$	(4 \pm 23) $\times 10^{-5}$		DESIG=391
Γ_{63}	$D^0 \rightarrow \bar{K}^*(1680)^0 \pi^0, \bar{K}^{*0} \rightarrow K_S^0 \pi^0$	(1.0 \pm 0.4) $\times 10^{-3}$		DESIG=392

Γ_{64}	$D^0 \rightarrow K_S^0 f_2(1270)$, $f_2 \rightarrow 2\pi^0$	$(2.3 \pm 1.1) \times 10^{-4}$	DESIG=393
Γ_{65}	$D^0 \rightarrow 2K_S^0$, one $K_S^0 \rightarrow 2\pi^0$	$(3.2 \pm 1.1) \times 10^{-4}$	DESIG=394
Γ_{66}	$D^0 \rightarrow K_S^0 2\pi^0$ nonresonant		DESIG=186
Γ_{67}	$D^0 \rightarrow K^- 2\pi^+ \pi^-$	[e] $(8.08 \pm 0.21) \%$	S=1.3 DESIG=2
Γ_{68}	$D^0 \rightarrow K^- \pi^+ \rho^0$ total	$(6.75 \pm 0.33) \%$	DESIG=116
Γ_{69}	$D^0 \rightarrow K^- \pi^+ \rho^0$ 3-body	$(5.1 \pm 2.3) \times 10^{-3}$	DESIG=23
Γ_{70}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(1.05 \pm 0.23) \%$	DESIG=86;OUR EVAL
Γ_{71}	$D^0 \rightarrow K^- a_1(1260)^+$, $a_1(1260)^+ \rightarrow 2\pi^+ \pi^-$	$(3.6 \pm 0.6) \%$	DESIG=181;OUR EVAL
Γ_{72}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^-$ total, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(1.6 \pm 0.4) \%$	DESIG=168;OUR EVAL
Γ_{73}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^-$ 3-body, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(9.9 \pm 2.3) \times 10^{-3}$	DESIG=85;OUR EVAL
Γ_{74}	$D^0 \rightarrow K_1(1270)^- \pi^+$, $K_1(1270)^- \rightarrow K^- \pi^+ \pi^-$	[g] $(2.9 \pm 0.3) \times 10^{-3}$	DESIG=182;OUR EVAL
Γ_{75}	$D^0 \rightarrow K^- 2\pi^+ \pi^-$ nonresonant	$(1.88 \pm 0.26) \%$	DESIG=68
Γ_{76}	$D^0 \rightarrow K_S^0 \pi^+ \pi^- \pi^0$	[h] $(5.2 \pm 0.6) \%$	DESIG=143
Γ_{77}	$D^0 \rightarrow K_S^0 \eta$, $\eta \rightarrow \pi^+ \pi^- \pi^0$	$(1.02 \pm 0.09) \times 10^{-3}$	DESIG=135;OUR EVAL
Γ_{78}	$D^0 \rightarrow K_S^0 \omega$, $\omega \rightarrow \pi^+ \pi^- \pi^0$	$(9.9 \pm 0.5) \times 10^{-3}$	DESIG=110;OUR EVAL
Γ_{79}	$D^0 \rightarrow K^- \pi^+ 2\pi^0$		DESIG=20
Γ_{80}	$D^0 \rightarrow K^- 2\pi^+ \pi^- \pi^0$	$(4.2 \pm 0.4) \%$	DESIG=41
Γ_{81}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^- \pi^0$, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$	$(1.3 \pm 0.6) \%$	DESIG=55;OUR EVAL
Γ_{82}	$D^0 \rightarrow K^- \pi^+ \omega$, $\omega \rightarrow \pi^+ \pi^- \pi^0$	$(2.7 \pm 0.5) \%$	DESIG=206;OUR EVAL
Γ_{83}	$D^0 \rightarrow \bar{K}^*(892)^0 \omega$, $\bar{K}^*(892)^0 \rightarrow K^- \pi^+$, $\omega \rightarrow \pi^+ \pi^- \pi^0$	$(6.5 \pm 3.0) \times 10^{-3}$	DESIG=207;OUR EVAL
Γ_{84}	$D^0 \rightarrow K_S^0 \eta \pi^0$	$(5.5 \pm 1.1) \times 10^{-3}$	DESIG=292
Γ_{85}	$D^0 \rightarrow K_S^0 a_0(980)$, $a_0(980) \rightarrow \eta \pi^0$	$(6.5 \pm 2.0) \times 10^{-3}$	DESIG=293
Γ_{86}	$D^0 \rightarrow \bar{K}^*(892)^0 \eta$, $\bar{K}^*(892)^0 \rightarrow K_S^0 \pi$	$(1.6 \pm 0.5) \times 10^{-3}$	DESIG=294
Γ_{87}	$D^0 \rightarrow K_S^0 2\pi^+ 2\pi^-$	$(2.69 \pm 0.31) \times 10^{-3}$	DESIG=97
Γ_{88}	$D^0 \rightarrow K_S^0 \rho^0 \pi^+ \pi^-$, no $K^*(892)^-$	$(1.1 \pm 0.7) \times 10^{-3}$	DESIG=174
Γ_{89}	$D^0 \rightarrow K^*(892)^- 2\pi^+ \pi^-$, $K^*(892)^- \rightarrow K_S^0 \pi^-$, no ρ^0	$(5 \pm 8) \times 10^{-4}$	DESIG=175
Γ_{90}	$D^0 \rightarrow K^*(892)^- \rho^0 \pi^+$, $K^*(892)^- \rightarrow K_S^0 \pi^-$	$(1.6 \pm 0.6) \times 10^{-3}$	DESIG=176
Γ_{91}	$D^0 \rightarrow K_S^0 2\pi^+ 2\pi^-$ nonresonant	$< 1.2 \times 10^{-3}$ CL=90%	DESIG=177
Γ_{92}	$D^0 \rightarrow K^0 \pi^+ \pi^- 2\pi^0 (\pi^0)$		DESIG=43
Γ_{93}	$D^0 \rightarrow K^- 3\pi^+ 2\pi^-$	$(2.2 \pm 0.6) \times 10^{-4}$	DESIG=288
Fractions of many of the following modes with resonances have already appeared above as submodes of particular charged-particle modes. (Modes for which there are only upper limits and $\bar{K}^*(892)\rho$ submodes only appear below.)			CLUMP=D;NODE=S032
Γ_{94}	$D^0 \rightarrow K_S^0 \eta$	$(4.79 \pm 0.30) \times 10^{-3}$	DESIG=65
Γ_{95}	$D^0 \rightarrow K_S^0 \omega$	$(1.11 \pm 0.06) \%$	DESIG=64
Γ_{96}	$D^0 \rightarrow K_S^0 \eta'(958)$	$(9.4 \pm 0.5) \times 10^{-3}$	DESIG=187
Γ_{97}	$D^0 \rightarrow K^- a_1(1260)^+$	$(7.8 \pm 1.1) \%$	DESIG=69
Γ_{98}	$D^0 \rightarrow K^- a_2(1320)^+$	$< 2 \times 10^{-3}$ CL=90%	DESIG=25
Γ_{99}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^-$ total	$(2.4 \pm 0.5) \%$	DESIG=163

Γ_{100}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^-$ 3-body	(1.48 \pm 0.34) %	DESIG=24
Γ_{101}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$	(1.58 \pm 0.34) %	DESIG=22
Γ_{102}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$ transverse	(1.7 \pm 0.6) %	DESIG=73
Γ_{103}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$ S-wave	(3.0 \pm 0.6) %	DESIG=164
Γ_{104}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$ S-wave long	< 3 $\times 10^{-3}$ CL=90%	DESIG=74
Γ_{105}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$ P-wave	< 3 $\times 10^{-3}$ CL=90%	DESIG=75
Γ_{106}	$D^0 \rightarrow \bar{K}^*(892)^0 \rho^0$ D-wave	(2.1 \pm 0.6) %	DESIG=165
Γ_{107}	$D^0 \rightarrow K^- \pi^+ f_0(980)$		DESIG=167
Γ_{108}	$D^0 \rightarrow \bar{K}^*(892)^0 f_0(980)$		DESIG=166
Γ_{109}	$D^0 \rightarrow K_1(1270)^- \pi^+$	[g] (1.6 \pm 0.8) %	DESIG=70
Γ_{110}	$D^0 \rightarrow K_1(1400)^- \pi^+$	< 1.2 %	CL=90% DESIG=72
Γ_{111}	$D^0 \rightarrow K^*(1410)^- \pi^+$		DESIG=71
Γ_{112}	$D^0 \rightarrow \bar{K}^*(892)^0 \pi^+ \pi^- \pi^0$	(1.9 \pm 0.9) %	DESIG=56
Γ_{113}	$D^0 \rightarrow \bar{K}^*(892)^0 \eta$		DESIG=66
Γ_{114}	$D^0 \rightarrow K^- \pi^+ \omega$	(3.0 \pm 0.6) %	DESIG=197
Γ_{115}	$D^0 \rightarrow \bar{K}^*(892)^0 \omega$	(1.1 \pm 0.5) %	DESIG=57
Γ_{116}	$D^0 \rightarrow K^- \pi^+ \eta'(958)$	(7.5 \pm 1.9) $\times 10^{-3}$	DESIG=189
Γ_{117}	$D^0 \rightarrow \bar{K}^*(892)^0 \eta'(958)$	< 1.1 $\times 10^{-3}$ CL=90%	DESIG=190
Hadronic modes with three K's			
Γ_{118}	$D^0 \rightarrow K_S^0 K^+ K^-$	(4.47 \pm 0.34) $\times 10^{-3}$	NODE=S032;CLUMP=S DESIG=31
Γ_{119}	$D^0 \rightarrow K_S^0 a_0(980)^0, a_0^0 \rightarrow K^+ K^-$	(3.0 \pm 0.4) $\times 10^{-3}$	DESIG=321
Γ_{120}	$D^0 \rightarrow K^- a_0(980)^+, a_0^+ \rightarrow K^+ K_S^0$	(6.0 \pm 1.8) $\times 10^{-4}$	DESIG=322
Γ_{121}	$D^0 \rightarrow K^+ a_0(980)^-, a_0^- \rightarrow K^- K_S^0$	< 1.1 $\times 10^{-4}$ CL=95%	DESIG=323
Γ_{122}	$D^0 \rightarrow K_S^0 f_0(980), f_0 \rightarrow K^+ K^-$	< 9 $\times 10^{-5}$ CL=95%	DESIG=324
Γ_{123}	$D^0 \rightarrow K_S^0 \phi, \phi \rightarrow K^+ K^-$	(2.05 \pm 0.16) $\times 10^{-3}$	DESIG=114
Γ_{124}	$D^0 \rightarrow K_S^0 f_0(1370), f_0 \rightarrow K^+ K^-$	(1.7 \pm 1.1) $\times 10^{-4}$	DESIG=325
Γ_{125}	$D^0 \rightarrow 3K_S^0$	(9.1 \pm 1.3) $\times 10^{-4}$	DESIG=58
Γ_{126}	$D^0 \rightarrow K^+ 2K^- \pi^+$	(2.21 \pm 0.31) $\times 10^{-4}$	DESIG=219
Γ_{127}	$D^0 \rightarrow K^+ K^- \bar{K}^*(892)^0, \bar{K}^*(892)^0 \rightarrow K^- \pi^+$	(4.4 \pm 1.7) $\times 10^{-5}$	DESIG=283
Γ_{128}	$D^0 \rightarrow K^- \pi^+ \phi, \phi \rightarrow K^+ K^-$	(4.0 \pm 1.7) $\times 10^{-5}$	DESIG=275
Γ_{129}	$D^0 \rightarrow \phi \bar{K}^*(892)^0, \phi \rightarrow K^+ K^-, \bar{K}^*(892)^0 \rightarrow K^- \pi^+$	(1.06 \pm 0.20) $\times 10^{-4}$	DESIG=284
Γ_{130}	$D^0 \rightarrow K^+ 2K^- \pi^+$ nonresonant	(3.3 \pm 1.5) $\times 10^{-5}$	DESIG=282
Γ_{131}	$D^0 \rightarrow 2K_S^0 K^\pm \pi^\mp$	(6.0 \pm 1.3) $\times 10^{-4}$	DESIG=309
Pionic modes			
Γ_{132}	$D^0 \rightarrow \pi^+ \pi^-$	(1.402 \pm 0.026) $\times 10^{-3}$	NODE=S032;CLUMP=E DESIG=5
Γ_{133}	$D^0 \rightarrow 2\pi^0$	(8.20 \pm 0.35) $\times 10^{-4}$	DESIG=173
Γ_{134}	$D^0 \rightarrow \pi^+ \pi^- \pi^0$	(1.43 \pm 0.06) %	S=1.9 DESIG=29
Γ_{135}	$D^0 \rightarrow \rho^+ \pi^-$	(9.8 \pm 0.4) $\times 10^{-3}$	DESIG=326
Γ_{136}	$D^0 \rightarrow \rho^0 \pi^0$	(3.72 \pm 0.22) $\times 10^{-3}$	DESIG=327
Γ_{137}	$D^0 \rightarrow \rho^- \pi^+$	(4.96 \pm 0.24) $\times 10^{-3}$	DESIG=328
Γ_{138}	$D^0 \rightarrow \rho(1450)^+ \pi^-, \rho(1450)^+ \rightarrow \pi^+ \pi^0$	(1.6 \pm 2.0) $\times 10^{-5}$	DESIG=367
Γ_{139}	$D^0 \rightarrow \rho(1450)^0 \pi^0, \rho(1450)^0 \rightarrow \pi^+ \pi^-$	(4.3 \pm 1.9) $\times 10^{-5}$	DESIG=368
Γ_{140}	$D^0 \rightarrow \rho(1450)^- \pi^+, \rho(1450)^- \rightarrow \pi^- \pi^0$	(2.6 \pm 0.4) $\times 10^{-4}$	DESIG=369

Γ_{141}	$D^0 \rightarrow \rho(1700)^+ \pi^-$, $\rho(1700)^+ \rightarrow \pi^+ \pi^0$	$(5.9 \pm 1.4) \times 10^{-4}$	DESIG=370
Γ_{142}	$D^0 \rightarrow \rho(1700)^0 \pi^0$, $\rho(1700)^0 \rightarrow \pi^+ \pi^-$	$(7.2 \pm 1.7) \times 10^{-4}$	DESIG=371
Γ_{143}	$D^0 \rightarrow \rho(1700)^- \pi^+$, $\rho(1700)^- \rightarrow \pi^- \pi^0$	$(4.6 \pm 1.1) \times 10^{-4}$	DESIG=372
Γ_{144}	$D^0 \rightarrow f_0(980) \pi^0$, $f_0(980) \rightarrow \pi^+ \pi^-$	$(3.6 \pm 0.8) \times 10^{-5}$	DESIG=330
Γ_{145}	$D^0 \rightarrow f_0(500) \pi^0$, $f_0(500) \rightarrow \pi^+ \pi^-$	$(1.18 \pm 0.21) \times 10^{-4}$	DESIG=329
Γ_{146}	$D^0 \rightarrow (\pi^+ \pi^-)_{S\text{-wave}} \pi^0$		DESIG=331
Γ_{147}	$D^0 \rightarrow f_0(1370) \pi^0$, $f_0(1370) \rightarrow \pi^+ \pi^-$	$(5.3 \pm 2.1) \times 10^{-5}$	DESIG=373
Γ_{148}	$D^0 \rightarrow f_0(1500) \pi^0$, $f_0(1500) \rightarrow \pi^+ \pi^-$	$(5.6 \pm 1.5) \times 10^{-5}$	DESIG=374
Γ_{149}	$D^0 \rightarrow f_0(1710) \pi^0$, $f_0(1710) \rightarrow \pi^+ \pi^-$	$(4.4 \pm 1.5) \times 10^{-5}$	DESIG=375
Γ_{150}	$D^0 \rightarrow f_2(1270) \pi^0$, $f_2(1270) \rightarrow \pi^+ \pi^-$	$(1.89 \pm 0.20) \times 10^{-4}$	DESIG=376
Γ_{151}	$D^0 \rightarrow \pi^+ \pi^- \pi^0$ nonresonant	$(1.20 \pm 0.35) \times 10^{-4}$	DESIG=377
Γ_{152}	$D^0 \rightarrow 3\pi^0$	$< 3.5 \times 10^{-4}$	CL=90% DESIG=314
Γ_{153}	$D^0 \rightarrow 2\pi^+ 2\pi^-$	$(7.42 \pm 0.21) \times 10^{-3}$	S=1.1 DESIG=18
Γ_{154}	$D^0 \rightarrow a_1(1260)^+ \pi^-$, $a_1^+ \rightarrow 2\pi^+ \pi^-$ total	$(4.45 \pm 0.31) \times 10^{-3}$	DESIG=348
Γ_{155}	$D^0 \rightarrow a_1(1260)^+ \pi^-$, $a_1^+ \rightarrow \rho^0 \pi^+ S\text{-wave}$	$(3.21 \pm 0.25) \times 10^{-3}$	DESIG=349
Γ_{156}	$D^0 \rightarrow a_1(1260)^+ \pi^-$, $a_1^+ \rightarrow \rho^0 \pi^+ D\text{-wave}$	$(1.9 \pm 0.5) \times 10^{-4}$	DESIG=350
Γ_{157}	$D^0 \rightarrow a_1(1260)^+ \pi^-$, $a_1^+ \rightarrow \sigma \pi^+$	$(6.2 \pm 0.7) \times 10^{-4}$	DESIG=351
Γ_{158}	$D^0 \rightarrow 2\rho^0$ total	$(1.82 \pm 0.13) \times 10^{-3}$	DESIG=352
Γ_{159}	$D^0 \rightarrow 2\rho^0$, parallel helicities	$(8.2 \pm 3.2) \times 10^{-5}$	DESIG=353
Γ_{160}	$D^0 \rightarrow 2\rho^0$, perpendicular helicities	$(4.8 \pm 0.6) \times 10^{-4}$	DESIG=354
Γ_{161}	$D^0 \rightarrow 2\rho^0$, longitudinal helicities	$(1.25 \pm 0.10) \times 10^{-3}$	DESIG=355
Γ_{162}	$D^0 \rightarrow$ Resonant $(\pi^+ \pi^-) \pi^+ \pi^-$ 3-body total	$(1.48 \pm 0.12) \times 10^{-3}$	DESIG=356
Γ_{163}	$D^0 \rightarrow \sigma \pi^+ \pi^-$	$(6.1 \pm 0.9) \times 10^{-4}$	DESIG=357
Γ_{164}	$D^0 \rightarrow f_0(980) \pi^+ \pi^-$, $f_0 \rightarrow \pi^+ \pi^-$	$(1.8 \pm 0.5) \times 10^{-4}$	DESIG=358
Γ_{165}	$D^0 \rightarrow f_2(1270) \pi^+ \pi^-$, $f_2 \rightarrow \pi^+ \pi^-$	$(3.6 \pm 0.6) \times 10^{-4}$	DESIG=359
Γ_{166}	$D^0 \rightarrow \pi^+ \pi^- 2\pi^0$	$(1.00 \pm 0.09) \%$	DESIG=315
Γ_{167}	$D^0 \rightarrow \eta \pi^0$	[i] $(6.8 \pm 0.7) \times 10^{-4}$	DESIG=316
Γ_{168}	$D^0 \rightarrow \omega \pi^0$	[i] $< 2.6 \times 10^{-4}$ CL=90%	DESIG=317
Γ_{169}	$D^0 \rightarrow 2\pi^+ 2\pi^- \pi^0$	$(4.1 \pm 0.5) \times 10^{-3}$	DESIG=95
Γ_{170}	$D^0 \rightarrow \eta \pi^+ \pi^-$	[i] $(1.09 \pm 0.16) \times 10^{-3}$	DESIG=318
Γ_{171}	$D^0 \rightarrow \omega \pi^+ \pi^-$	[i] $(1.6 \pm 0.5) \times 10^{-3}$	DESIG=319
Γ_{172}	$D^0 \rightarrow 3\pi^+ 3\pi^-$	$(4.2 \pm 1.2) \times 10^{-4}$	DESIG=96
Γ_{173}	$D^0 \rightarrow \eta'(958) \pi^0$	$(9.0 \pm 1.4) \times 10^{-4}$	DESIG=378
Γ_{174}	$D^0 \rightarrow \eta'(958) \pi^+ \pi^-$	$(4.5 \pm 1.7) \times 10^{-4}$	DESIG=379
Γ_{175}	$D^0 \rightarrow 2\eta$	$(1.67 \pm 0.20) \times 10^{-3}$	DESIG=380
Γ_{176}	$D^0 \rightarrow \eta \eta'(958)$	$(1.05 \pm 0.26) \times 10^{-3}$	DESIG=381

Hadronic modes with a $K\bar{K}$ pair

Γ_{177}	$D^0 \rightarrow K^+ K^-$	$(3.96 \pm 0.08) \times 10^{-3}$	S=1.4	NODE=S032;CLUMP=F
Γ_{178}	$D^0 \rightarrow 2K_S^0$	$(1.7 \pm 0.4) \times 10^{-4}$	S=2.5	DESIG=7
Γ_{179}	$D^0 \rightarrow K_S^0 K^- \pi^+$	$(3.5 \pm 0.5) \times 10^{-3}$	S=1.2	DESIG=35
Γ_{180}	$D^0 \rightarrow \bar{K}^*(892)^0 K_S^0, \bar{K}^{*0} \rightarrow$	$< 5 \times 10^{-4}$	CL=90%	DESIG=93
Γ_{181}	$D^0 \rightarrow K_S^0 \bar{K}^+ \pi^-$	$(2.1 \pm 0.4) \times 10^{-3}$	S=1.3	DESIG=91
Γ_{182}	$D^0 \rightarrow K^*(892)^0 K_S^0, K^{*0} \rightarrow$	$< 1.8 \times 10^{-4}$	CL=90%	DESIG=123
Γ_{183}	$D^0 \rightarrow K^+ \bar{K}^- \pi^0$	$(3.29 \pm 0.14) \times 10^{-3}$		DESIG=124
Γ_{184}	$D^0 \rightarrow K^*(892)^+ K^-, K^*(892)^+ \rightarrow K^+ \pi^0$	$(1.46 \pm 0.07) \times 10^{-3}$		DESIG=243
Γ_{185}	$D^0 \rightarrow K^*(892)^- K^+, K^*(892)^- \rightarrow K^- \pi^0$	$(5.2 \pm 0.4) \times 10^{-4}$		DESIG=344
Γ_{186}	$D^0 \rightarrow (K^+ \pi^0)_{S-wave} K^-$	$(2.34 \pm 0.17) \times 10^{-3}$		DESIG=345
Γ_{187}	$D^0 \rightarrow (K^- \pi^0)_{S-wave} K^+$	$(1.3 \pm 0.4) \times 10^{-4}$		DESIG=364
Γ_{188}	$D^0 \rightarrow f_0(980) \pi^0, f_0 \rightarrow$	$(3.5 \pm 0.6) \times 10^{-4}$		DESIG=365
Γ_{189}	$D^0 \rightarrow \phi \pi^0, \phi \rightarrow K^+ K^-$	$(6.4 \pm 0.4) \times 10^{-4}$		DESIG=366
Γ_{190}	$D^0 \rightarrow K^+ K^- \pi^0$ nonresonant			DESIG=346
Γ_{191}	$D^0 \rightarrow 2K_S^0 \pi^0$	$< 5.9 \times 10^{-4}$		DESIG=347
Γ_{192}	$D^0 \rightarrow K^+ K^- \pi^+ \pi^-$	$(2.43 \pm 0.12) \times 10^{-3}$		DESIG=242
Γ_{193}	$D^0 \rightarrow \phi (\pi^+ \pi^-)_{S-wave}, \phi \rightarrow K^+ K^-$	$(2.50 \pm 0.33) \times 10^{-4}$		DESIG=63
Γ_{194}	$D^0 \rightarrow (\phi \rho^0)_{S-wave}, \phi \rightarrow K^+ K^-$	$(9.3 \pm 1.2) \times 10^{-4}$		DESIG=115
Γ_{195}	$D^0 \rightarrow (\phi \rho^0)_{D-wave}, \phi \rightarrow K^+ K^-$	$(8.3 \pm 2.3) \times 10^{-5}$		DESIG=134
Γ_{196}	$D^0 \rightarrow (K^{*0} \bar{K}^{*0})_{S-wave}, K^{*0} \rightarrow K^\pm \pi^\mp$	$(1.48 \pm 0.30) \times 10^{-4}$		DESIG=395
Γ_{197}	$D^0 \rightarrow (K^- \pi^+)_{P-wave}, (K^+ \pi^-)_{S-wave},$	$(2.6 \pm 0.5) \times 10^{-4}$		DESIG=396
Γ_{198}	$D^0 \rightarrow K_1(1270)^+ K^-, K_1(1270)^+ \rightarrow K^{*0} \pi^+$	$(1.8 \pm 0.5) \times 10^{-4}$		DESIG=397
Γ_{199}	$D^0 \rightarrow K_1(1270)^+ K^-, K_1(1270)^+ \rightarrow \rho^0 K^+$	$(1.14 \pm 0.26) \times 10^{-4}$		DESIG=398
Γ_{200}	$D^0 \rightarrow K_1(1270)^- K^+, K_1(1270)^- \rightarrow \bar{K}^{*0} \pi^-$	$(2.2 \pm 1.2) \times 10^{-5}$		DESIG=399
Γ_{201}	$D^0 \rightarrow K_1(1270)^- K^+, K_1(1270)^- \rightarrow \rho^0 K^-$	$(1.46 \pm 0.25) \times 10^{-4}$		DESIG=400
Γ_{202}	$D^0 \rightarrow K^*(1410)^+ K^-, K^*(1410)^+ \rightarrow K^{*0} \pi^+$	$(1.02 \pm 0.26) \times 10^{-4}$		DESIG=401
Γ_{203}	$D^0 \rightarrow K^*(1410)^- K^+, K^*(1410)^- \rightarrow \bar{K}^{*0} \pi^-$	$(1.14 \pm 0.25) \times 10^{-4}$		DESIG=402
Γ_{204}	$D^0 \rightarrow K^+ K^- \rho^0 3\text{-body}$			DESIG=403
Γ_{205}	$D^0 \rightarrow f_0(980) \pi^+ \pi^-, f_0 \rightarrow K^+ K^-$			DESIG=220
Γ_{206}	$D^0 \rightarrow K^*(892)^0 K^\mp \pi^\pm 3\text{-body}, K^{*0} \rightarrow K^\pm \pi^\mp$			DESIG=338
Γ_{207}	$D^0 \rightarrow K^*(892)^0 \bar{K}^*(892)^0, K^{*0} \rightarrow K^\pm \pi^\mp$			DESIG=208
Γ_{208}	$D^0 \rightarrow K_1(1270)^\pm K^\mp, K_1(1270)^\pm \rightarrow K^\pm \pi^+ \pi^-$			DESIG=137
Γ_{209}	$D^0 \rightarrow K_1(1400)^\pm K^\mp, K_1(1400)^\pm \rightarrow K^\pm \pi^+ \pi^-$			DESIG=336
Γ_{210}	$D^0 \rightarrow 2K_S^0 \pi^+ \pi^-$	$(1.23 \pm 0.24) \times 10^{-3}$		DESIG=337
Γ_{211}	$D^0 \rightarrow K_S^0 K^- 2\pi^+ \pi^-$	$< 1.5 \times 10^{-4}$	CL=90%	DESIG=215
Γ_{212}	$D^0 \rightarrow K^+ K^- \pi^+ \pi^- \pi^0$	$(3.1 \pm 2.0) \times 10^{-3}$		DESIG=178
Γ_{213}	$D^0 \rightarrow \phi \pi^0$			DESIG=131
Γ_{214}	$D^0 \rightarrow \phi \eta$	$(1.4 \pm 0.5) \times 10^{-4}$		CLUMP=G;NODE=S032
Γ_{215}	$D^0 \rightarrow \phi \omega$	$< 2.1 \times 10^{-3}$	CL=90%	DESIG=212
	Other $K\bar{K}X$ modes. They include all decay modes of the ϕ , η , and ω .			
				DESIG=213
				DESIG=214

Radiative modes					
$\Gamma_{216} D^0 \rightarrow \rho^0 \gamma$		< 2.4	$\times 10^{-4}$	CL=90%	NODE=S032;CLUMP=I DESIG=245
$\Gamma_{217} D^0 \rightarrow \omega \gamma$		< 2.4	$\times 10^{-4}$	CL=90%	DESIG=246
$\Gamma_{218} D^0 \rightarrow \phi \gamma$		(2.70 \pm 0.35)	$\times 10^{-5}$		DESIG=247
$\Gamma_{219} D^0 \rightarrow \bar{K}^*(892)^0 \gamma$		(3.27 \pm 0.34)	$\times 10^{-4}$		DESIG=248
Doubly Cabibbo suppressed (DC) modes or $\Delta C = 2$ forbidden via mixing (C2M) modes					
$\Gamma_{220} D^0 \rightarrow K^+ \ell^- \bar{\nu}_\ell$ via \bar{D}^0		< 2.2	$\times 10^{-5}$	CL=90%	NODE=S032;CLUMP=T DESIG=241;OUR EVAL
$\Gamma_{221} D^0 \rightarrow K^+$ or $\frac{K^*(892)^+}{\bar{D}^0} e^- \bar{\nu}_e$ via		< 6	$\times 10^{-5}$	CL=90%	DESIG=311;OUR EVAL
$\Gamma_{222} D^0 \rightarrow K^+ \pi^-$	DC	(1.47 \pm 0.07)	$\times 10^{-4}$	S=2.8	DESIG=50
$\Gamma_{223} D^0 \rightarrow K^+ \pi^-$ via DCS		(1.31 \pm 0.08)	$\times 10^{-4}$		DESIG=362
$\Gamma_{224} D^0 \rightarrow K^+ \pi^-$ via \bar{D}^0		< 1.6	$\times 10^{-5}$	CL=95%	DESIG=6
$\Gamma_{225} D^0 \rightarrow K_S^0 \pi^+ \pi^-$ in $D^0 \rightarrow \bar{D}^0$		< 1.8	$\times 10^{-4}$	CL=95%	DESIG=339
$\Gamma_{226} D^0 \rightarrow K^*(892)^+ \pi^-$, $K^*(892)^+ \rightarrow K_S^0 \pi^+$	DC	(1.14 \pm 0.60)	$\times 10^{-4}$		DESIG=287;OUR EVAL
$\Gamma_{227} D^0 \rightarrow K_0^*(1430)^+ \pi^-$, $K_0^*(1430)^+ \rightarrow K_S^0 \pi^+$	DC	< 1.4	$\times 10^{-5}$		DESIG=385;OUR EVAL
$\Gamma_{228} D^0 \rightarrow K_2^*(1430)^+ \pi^-$, $K_2^*(1430)^+ \rightarrow K_S^0 \pi^+$	DC	< 3.4	$\times 10^{-5}$		DESIG=386;OUR EVAL
$\Gamma_{229} D^0 \rightarrow K^+ \pi^- \pi^0$	DC	(3.04 \pm 0.17)	$\times 10^{-4}$		DESIG=277
$\Gamma_{230} D^0 \rightarrow K^+ \pi^- \pi^0$ via \bar{D}^0		(7.3 \pm 0.5)	$\times 10^{-4}$		DESIG=343
$\Gamma_{231} D^0 \rightarrow K^+ \pi^+ 2\pi^-$	DC	(2.62 \pm 0.21)	$\times 10^{-4}$		DESIG=51
$\Gamma_{232} D^0 \rightarrow K^+ \pi^+ 2\pi^-$ via \bar{D}^0		< 4	$\times 10^{-4}$	CL=90%	DESIG=222
$\Gamma_{233} D^0 \rightarrow K^+ \pi^-$ or $K^+ \pi^+ 2\pi^-$ via \bar{D}^0					DESIG=244
$\Gamma_{234} D^0 \rightarrow \mu^-$ anything via \bar{D}^0		< 4	$\times 10^{-4}$	CL=90%	DESIG=26
$\Delta C = 1$ weak neutral current (C1) modes, Lepton Family number (LF) violating modes, Lepton (L) or Baryon (B) number violating modes					
$\Gamma_{235} D^0 \rightarrow \gamma \gamma$	C1	< 2.2	$\times 10^{-6}$	CL=90%	NODE=S032;CLUMP=H DESIG=45
$\Gamma_{236} D^0 \rightarrow e^+ e^-$	C1	< 7.9	$\times 10^{-8}$	CL=90%	DESIG=39
$\Gamma_{237} D^0 \rightarrow \mu^+ \mu^-$	C1	< 1.4	$\times 10^{-7}$	CL=90%	DESIG=28
$\Gamma_{238} D^0 \rightarrow \pi^0 e^+ e^-$	C1	< 4.5	$\times 10^{-5}$	CL=90%	DESIG=225
$\Gamma_{239} D^0 \rightarrow \pi^0 \mu^+ \mu^-$	C1	< 1.8	$\times 10^{-4}$	CL=90%	DESIG=216
$\Gamma_{240} D^0 \rightarrow \eta e^+ e^-$	C1	< 1.1	$\times 10^{-4}$	CL=90%	DESIG=226
$\Gamma_{241} D^0 \rightarrow \eta \mu^+ \mu^-$	C1	< 5.3	$\times 10^{-4}$	CL=90%	DESIG=227
$\Gamma_{242} D^0 \rightarrow \pi^+ \pi^- e^+ e^-$	C1	< 3.73	$\times 10^{-4}$	CL=90%	DESIG=262
$\Gamma_{243} D^0 \rightarrow \rho^0 e^+ e^-$	C1	< 1.0	$\times 10^{-4}$	CL=90%	DESIG=52
$\Gamma_{244} D^0 \rightarrow \pi^+ \pi^- \mu^+ \mu^-$	C1	< 3.0	$\times 10^{-5}$	CL=90%	DESIG=263
$\Gamma_{245} D^0 \rightarrow \rho^0 \mu^+ \mu^-$	C1	< 2.2	$\times 10^{-5}$	CL=90%	DESIG=53
$\Gamma_{246} D^0 \rightarrow \omega e^+ e^-$	C1	< 1.8	$\times 10^{-4}$	CL=90%	DESIG=228
$\Gamma_{247} D^0 \rightarrow \omega \mu^+ \mu^-$	C1	< 8.3	$\times 10^{-4}$	CL=90%	DESIG=229
$\Gamma_{248} D^0 \rightarrow K^- K^+ e^+ e^-$	C1	< 3.15	$\times 10^{-4}$	CL=90%	DESIG=266
$\Gamma_{249} D^0 \rightarrow \phi e^+ e^-$	C1	< 5.2	$\times 10^{-5}$	CL=90%	DESIG=230
$\Gamma_{250} D^0 \rightarrow K^- K^+ \mu^+ \mu^-$	C1	< 3.3	$\times 10^{-5}$	CL=90%	DESIG=267
$\Gamma_{251} D^0 \rightarrow \phi \mu^+ \mu^-$	C1	< 3.1	$\times 10^{-5}$	CL=90%	DESIG=231
$\Gamma_{252} D^0 \rightarrow \bar{K}^0 e^+ e^-$	[j]	< 1.1	$\times 10^{-4}$	CL=90%	DESIG=67
$\Gamma_{253} D^0 \rightarrow \bar{K}^0 \mu^+ \mu^-$	[j]	< 2.6	$\times 10^{-4}$	CL=90%	DESIG=217
$\Gamma_{254} D^0 \rightarrow K^- \pi^+ e^+ e^-$	C1	< 3.85	$\times 10^{-4}$	CL=90%	DESIG=264
$\Gamma_{255} D^0 \rightarrow \bar{K}^*(892)^0 e^+ e^-$	[j]	< 4.7	$\times 10^{-5}$	CL=90%	DESIG=232
$\Gamma_{256} D^0 \rightarrow K^- \pi^+ \mu^+ \mu^-$	C1	< 3.59	$\times 10^{-4}$	CL=90%	DESIG=265
$\Gamma_{257} D^0 \rightarrow \bar{K}^*(892)^0 \mu^+ \mu^-$	[j]	< 2.4	$\times 10^{-5}$	CL=90%	DESIG=233

Γ_{258}	$D^0 \rightarrow \pi^+ \pi^- \pi^0 \mu^+ \mu^-$	<i>C1</i>	< 8.1	$\times 10^{-4}$	CL=90%	DESIG=218
Γ_{259}	$D^0 \rightarrow \mu^\pm e^\mp$	<i>LF</i>	[<i>k</i>] < 2.6	$\times 10^{-7}$	CL=90%	DESIG=40
Γ_{260}	$D^0 \rightarrow \pi^0 e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 8.6	$\times 10^{-5}$	CL=90%	DESIG=234
Γ_{261}	$D^0 \rightarrow \eta e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 1.0	$\times 10^{-4}$	CL=90%	DESIG=235
Γ_{262}	$D^0 \rightarrow \pi^+ \pi^- e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 1.5	$\times 10^{-5}$	CL=90%	DESIG=268
Γ_{263}	$D^0 \rightarrow \rho^0 e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 4.9	$\times 10^{-5}$	CL=90%	DESIG=236
Γ_{264}	$D^0 \rightarrow \omega e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 1.2	$\times 10^{-4}$	CL=90%	DESIG=237
Γ_{265}	$D^0 \rightarrow K^- K^+ e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 1.8	$\times 10^{-4}$	CL=90%	DESIG=270
Γ_{266}	$D^0 \rightarrow \phi e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 3.4	$\times 10^{-5}$	CL=90%	DESIG=238
Γ_{267}	$D^0 \rightarrow \bar{K}^0 e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 1.0	$\times 10^{-4}$	CL=90%	DESIG=239
Γ_{268}	$D^0 \rightarrow K^- \pi^+ e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 5.53	$\times 10^{-4}$	CL=90%	DESIG=269
Γ_{269}	$D^0 \rightarrow \bar{K}^*(892)^0 e^\pm \mu^\mp$	<i>LF</i>	[<i>k</i>] < 8.3	$\times 10^{-5}$	CL=90%	DESIG=240
Γ_{270}	$D^0 \rightarrow 2\pi^- 2e^+ + \text{c.c.}$	<i>L</i>	< 1.12	$\times 10^{-4}$	CL=90%	DESIG=253
Γ_{271}	$D^0 \rightarrow 2\pi^- 2\mu^+ + \text{c.c.}$	<i>L</i>	< 2.9	$\times 10^{-5}$	CL=90%	DESIG=254
Γ_{272}	$D^0 \rightarrow K^- \pi^- 2e^+ + \text{c.c.}$	<i>L</i>	< 2.06	$\times 10^{-4}$	CL=90%	DESIG=255
Γ_{273}	$D^0 \rightarrow K^- \pi^- 2\mu^+ + \text{c.c.}$	<i>L</i>	< 3.9	$\times 10^{-4}$	CL=90%	DESIG=256
Γ_{274}	$D^0 \rightarrow 2K^- 2e^+ + \text{c.c.}$	<i>L</i>	< 1.52	$\times 10^{-4}$	CL=90%	DESIG=257
Γ_{275}	$D^0 \rightarrow 2K^- 2\mu^+ + \text{c.c.}$	<i>L</i>	< 9.4	$\times 10^{-5}$	CL=90%	DESIG=258
Γ_{276}	$D^0 \rightarrow \pi^- \pi^- e^+ \mu^+ +$ c.c.	<i>L</i>	< 7.9	$\times 10^{-5}$	CL=90%	DESIG=259
Γ_{277}	$D^0 \rightarrow K^- \pi^- e^+ \mu^+ +$ c.c.	<i>L</i>	< 2.18	$\times 10^{-4}$	CL=90%	DESIG=260
Γ_{278}	$D^0 \rightarrow 2K^- e^+ \mu^+ + \text{c.c.}$	<i>L</i>	< 5.7	$\times 10^{-5}$	CL=90%	DESIG=261
Γ_{279}	$D^0 \rightarrow p e^-$	<i>L,B</i>	[<i>l</i>] < 1.0	$\times 10^{-5}$	CL=90%	DESIG=387
Γ_{280}	$D^0 \rightarrow \bar{p} e^+$	<i>L,B</i>	[<i>n</i>] < 1.1	$\times 10^{-5}$	CL=90%	DESIG=388
Γ_{281}	Unaccounted decay modes		(38.2 \pm 1.4) %	S=1.1	NODE=S032;CLUMP=Z DESIG=19	

- [a] This value is obtained by subtracting the branching fractions for 2-, 4- and 6-prongs from unity. LINKAGE=TP0
- [b] This is the sum of our $K^- 2\pi^+ \pi^-$, $K^- 2\pi^+ \pi^- \pi^0$, $\bar{K}^0 2\pi^+ 2\pi^-$, $K^+ 2K^- \pi^+$, $2\pi^+ 2\pi^-$, $2\pi^+ 2\pi^- \pi^0$, $K^+ K^- \pi^+ \pi^-$, and $K^+ K^- \pi^+ \pi^- \pi^0$, branching fractions. LINKAGE=TP4
- [c] This is the sum of our $K^- 3\pi^+ 2\pi^-$ and $3\pi^+ 3\pi^-$ branching fractions. LINKAGE=TP6
- [d] The branching fractions for the $K^- e^+ \nu_e$, $K^*(892)^- e^+ \nu_e$, $\pi^- e^+ \nu_e$, and $\rho^- e^+ \nu_e$ modes add up to 6.19 ± 0.17 %. LINKAGE=EAN
- [e] The branching fraction for this mode may differ from the sum of the submodes that contribute to it, due to interference effects. See the relevant papers. LINKAGE=SDQ
- [f] This is a doubly Cabibbo-suppressed mode. LINKAGE=DCS
- [g] The two experiments measuring this fraction are in serious disagreement. See the Particle Listings. LINKAGE=NF
- [h] Submodes of the $D^0 \rightarrow K_S^0 \pi^+ \pi^- \pi^0$ mode with a K^* and/or ρ were studied by COFFMAN 92B, but with only 140 events. With nothing new for 18 years, we refer to our 2008 edition, Physics Letters **B667** 1 (2008), for those results. LINKAGE=DKP
- [i] This branching fraction includes all the decay modes of the resonance in the final state. LINKAGE=ADC
- [j] This mode is not a useful test for a $\Delta C=1$ weak neutral current because both quarks must change flavor in this decay. LINKAGE=FIX
- [k] The value is for the sum of the charge states or particle/antiparticle states indicated. LINKAGE=SG
- [l] This limit is for either D^0 or \bar{D}^0 to $p e^-$. LINKAGE=DPE
- [n] This limit is for either D^0 or \bar{D}^0 to $\bar{p} e^+$. LINKAGE=PEP

CONSTRAINED FIT INFORMATION

An overall fit to 54 branching ratios uses 106 measurements and one constraint to determine 31 parameters. The overall fit has a $\chi^2 = 100.3$ for 76 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\langle \delta x_i \delta x_j \rangle / (\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_{18}	2									
x_{19}	20	9								
x_{20}	0	1	0							
x_{28}	0	0	0	0						
x_{29}	3	2	17	0	0					
x_{31}	4	49	18	2	0	3				
x_{33}	1	17	6	2	0	1	35			
x_{35}	0	7	2	15	0	0	14	16		
x_{50}	0	-2	-1	0	0	0	-3	-1	0	
x_{67}	1	10	4	0	0	1	21	8	3	54
x_{76}	0	3	1	6	0	0	5	6	40	0
x_{80}	0	4	2	0	0	0	8	3	1	8
x_{94}	1	9	3	0	0	1	18	6	2	-1
x_{95}	0	0	0	1	0	0	1	1	5	0
x_{96}	1	10	4	3	0	1	21	9	21	-1
x_{132}	2	30	11	1	0	2	62	22	8	-2
x_{133}	1	7	3	0	0	0	14	5	2	-1
x_{134}	0	-1	0	0	0	0	-1	0	0	82
x_{153}	1	13	5	1	0	1	26	9	4	29
x_{167}	0	5	2	0	0	0	11	4	1	0
x_{173}	0	4	1	0	0	0	7	3	1	0
x_{175}	0	5	2	0	0	0	10	3	1	0
x_{176}	0	2	1	0	0	0	5	2	1	0
x_{177}	2	29	11	1	0	2	60	21	8	-2
x_{178}	0	2	1	1	0	0	5	3	8	0
x_{179}	0	3	1	6	0	0	7	7	38	0
x_{181}	0	3	1	5	0	0	6	6	35	0
x_{218}	0	4	2	0	0	0	9	3	1	0
x_{222}	1	12	4	1	0	1	24	9	3	-1
x_{281}	-48	-13	-22	-18	-1	-6	-21	-14	-40	-51
	x_6	x_{18}	x_{19}	x_{20}	x_{28}	x_{29}	x_{31}	x_{33}	x_{35}	x_{50}

x_{76}	1									
x_{80}	15	0								
x_{94}	4	1	2							
x_{95}	0	12	0	0						
x_{96}	4	8	2	4	1					
x_{132}	13	3	5	11	0	13				
x_{133}	3	1	1	3	0	3	9			
x_{134}	45	0	6	0	0	0	-1	0		
x_{153}	57	1	10	5	0	5	16	4	24	
x_{167}	2	1	1	2	0	2	7	2	0	3
x_{173}	2	0	1	1	0	2	5	1	0	2
x_{175}	2	1	1	2	0	2	6	1	0	3
x_{176}	1	0	0	1	0	1	3	1	0	1
x_{177}	13	3	5	11	0	13	38	9	-1	16
x_{178}	1	3	0	1	0	2	3	1	0	1
x_{179}	1	15	1	1	2	8	4	1	0	2
x_{181}	1	14	0	1	2	7	4	1	0	2
x_{218}	2	0	1	2	0	2	6	1	0	2
x_{222}	5	1	2	5	0	5	15	4	0	6
x_{281}	-46	-55	-37	-6	-11	-15	-13	-3	-44	-29
	x_{67}	x_{76}	x_{80}	x_{94}	x_{95}	x_{96}	x_{132}	x_{133}	x_{134}	x_{153}
x_{173}	1									
x_{175}	1	1								
x_{176}	1	0	0							
x_{177}	7	4	6	3						
x_{178}	1	0	0	0	3					
x_{179}	1	0	1	0	4	3				
x_{181}	1	0	1	0	3	3	83			
x_{218}	1	1	1	0	8	0	1	1		
x_{222}	3	2	3	1	15	1	2	1	2	
x_{281}	-3	-3	-4	-3	-13	-4	-21	-19	-2	-5
	x_{167}	x_{173}	x_{175}	x_{176}	x_{177}	x_{178}	x_{179}	x_{181}	x_{218}	x_{222}

CONSTRAINED FIT INFORMATION

An overall fit to 3 branching ratios uses 3 measurements and one constraint to determine 4 parameters. The overall fit has a $\chi^2 = 0.0$ for 0 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\langle \delta x_i \delta x_j \rangle / (\delta x_i \cdot \delta x_j)$, in percent, from the fit to the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_2	-100			
x_3	-46	40		
x_4	0	0	0	
	x_1	x_2	x_3	

D⁰ BRANCHING RATIOS

NODE=S032240

Some older now obsolete results have been omitted from these Listings.

Topological modes

$\Gamma(0\text{-prongs})/\Gamma_{\text{total}}$

Γ_1/Γ

This value is obtained by subtracting the branching fractions for 2-, 4-, and 6-prongs from unity.

VALUE	DOCUMENT ID
0.15±0.06 OUR FIT	

$\Gamma(4\text{-prongs})/\Gamma_{\text{total}}$

Γ_3/Γ

This is the sum of our $K^- 2\pi^+ \pi^-$, $K^- 2\pi^+ \pi^- \pi^0$, $\bar{K}^0 2\pi^+ 2\pi^-$, $K^+ 2K^- \pi^+$, $2\pi^+ 2\pi^-$, $2\pi^+ 2\pi^- \pi^0$, $K^+ K^- \pi^+ \pi^-$, and $K^+ K^- \pi^+ \pi^- \pi^0$ branching fractions.

VALUE	DOCUMENT ID
0.145±0.005 OUR FIT	
0.145±0.005	PDG 12

$\Gamma(4\text{-prongs})/\Gamma(2\text{-prongs})$

Γ_3/Γ_2

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.207±0.016 OUR FIT				
0.207±0.016±0.004	226	ONENGUT 05	CHRS	ν_μ emulsion, $\bar{E}_\nu \approx 27$ GeV

$\Gamma(6\text{-prongs})/\Gamma_{\text{total}}$

Γ_4/Γ

This is the sum of our $K^- 3\pi^+ 2\pi^-$ and $3\pi^+ 3\pi^-$ branching fractions.

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
6.4± 1.3 OUR FIT				
6.4± 1.3	PDG 12			

• • • We do not use the following data for averages, fits, limits, etc. • • •

12	$^{+13}_{-9}$	± 2	3	ONENGUT 05	CHRS	ν_μ emulsion, $\bar{E}_\nu \approx 27$ GeV
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Inclusive modes

$\Gamma(e^+\text{ anything})/\Gamma_{\text{total}}$

Γ_5/Γ

The branching fractions for the $K^- e^+ \nu_e$, $K^*(892)^- e^+ \nu_e$, $\pi^- e^+ \nu_e$, and $\rho^- e^+ \nu_e$ modes add up to 6.20 ± 0.17 %.

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
6.49±0.11 OUR AVERAGE				
6.46±0.09±0.11	6584 ± 96	1 ASNER	10 CLEO	$e^+ e^-$ at 3774 MeV
$6.3 \pm 0.7 \pm 0.4$	290 ± 32	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$
$6.46 \pm 0.17 \pm 0.13$	2246 ± 57	ADAM	06A CLEO	See ASNER 10
$6.9 \pm 0.3 \pm 0.5$	1670	ALBRECHT	96C ARG	$e^+ e^- \approx 10$ GeV
$6.64 \pm 0.18 \pm 0.29$	4609	KUBOTA	96B CLE2	$e^+ e^- \approx \gamma(4S)$

¹ Using the D^+ and D^0 lifetimes, ASNER 10 finds that the ratio of the D^+ and D^0 semileptonic widths is $0.985 \pm 0.015 \pm 0.024$.

$\Gamma(\mu^+\text{ anything})/\Gamma_{\text{total}}$

Γ_6/Γ

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
6.7±0.6 OUR FIT				

6.4±0.8 OUR AVERAGE

6.8±1.5±0.8	79 ± 10	1 ABLIKIM	08L BES2	$e^+ e^- \approx \psi(3772)$
$6.5 \pm 1.2 \pm 0.3$	36	KAYIS-TOPAK.05	CHRS	ν_μ emulsion
$6.0 \pm 0.7 \pm 1.2$	310	ALBRECHT	96C ARG	$e^+ e^- \approx 10$ GeV

¹ ABLIKIM 08L finds the ratio of $D^+ \rightarrow \mu^+ X$ and $D^0 \rightarrow \mu^+ X$ branching fractions to be $2.59 \pm 0.70 \pm 0.25$, in accord with the ratio of D^+ and D^0 lifetimes, 2.54 ± 0.02 .

$\Gamma(K^-\text{ anything})/\Gamma_{\text{total}}$

Γ_7/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.547±0.028 OUR AVERAGE				Error includes scale factor of 1.3. See the ideogram below.

0.578±0.016±0.032	2098 ± 59	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$
$0.546^{+0.039}_{-0.038}$		1 BARLAG	92C ACCM	π^- Cu 230 GeV
$0.609 \pm 0.032 \pm 0.052$		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV
0.42 ± 0.08		AGUILAR-...	87E HYBR	$\pi p, pp$ 360, 400 GeV
0.55 ± 0.11	121	SCHINDLER	81 MRK2	$e^+ e^-$ 3.771 GeV
0.35 ± 0.10	19	VUILLEMIN	78 LGW	$e^+ e^-$ 3.772 GeV

NODE=S032240

NODE=S032305

NODE=S032S37

NODE=S032S37

NODE=S032S37

NODE=S032S34

NODE=S032S34

NODE=S032S34

NODE=S032S35

NODE=S032S35

NODE=S032310

NODE=S032R5

NODE=S032R5

NODE=S032R5

NODE=S032R5;LINKAGE=AS

NODE=S032S60

NODE=S032S60

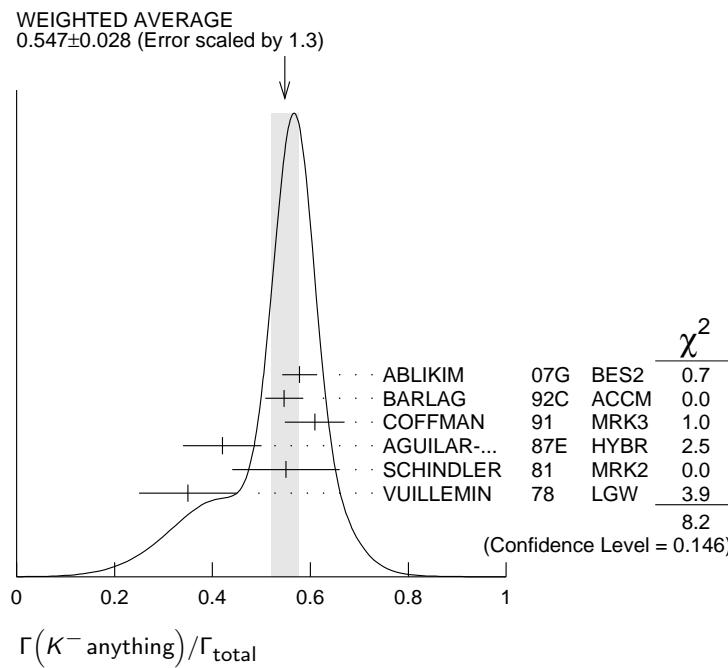
NODE=S032S60;LINKAGE=AB

NODE=S032R1

NODE=S032R1

¹ BARLAG 92C computes the branching fraction using topological normalization.

NODE=S032R1;LINKAGE=BD



$\Gamma(K^0 \text{ anything}) + \Gamma(\bar{K}^0 \text{ anything}) / \Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.47 ± 0.04 OUR AVERAGE				
0.476±0.048±0.030	250 ± 25	ABLIKIM	06U BES2	$e^+ e^-$ at 3773 MeV
0.455±0.050±0.032		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV

NODE=S032R3
NODE=S032R3

$\Gamma(K^+ \text{ anything}) / \Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.034±0.004 OUR AVERAGE				
0.035±0.007±0.003	119 ± 23	ABLIKIM	07G BES2	$e^+ e^- \approx \psi(3770)$
0.034 ^{+0.007} _{-0.005}		1 BARLAG	92C ACCM	π^- Cu 230 GeV
0.028±0.009±0.004		COFFMAN	91 MRK3	$e^+ e^-$ 3.77 GeV
0.03 ^{+0.05} _{-0.02}		AGUILAR-...	87E HYBR	$\pi p, pp$ 360, 400 GeV
0.08 ± 0.03	25	SCHINDLER	81 MRK2	$e^+ e^-$ 3.771 GeV

NODE=S032R2
NODE=S032R2

¹ BARLAG 92C computes the branching fraction using topological normalization.

NODE=S032R2;LINKAGE=BD

$\Gamma(K^*(892)^- \text{ anything}) / \Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.153±0.083±0.019	28 ± 15	ABLIKIM	06U BES2	$e^+ e^-$ at 3773 MeV

NODE=S032R4
NODE=S032R4

$\Gamma(\bar{K}^*(892)^0 \text{ anything}) / \Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.087±0.040±0.012	96 ± 44	ABLIKIM	05P BES	$e^+ e^- \approx 3773$ MeV

NODE=S032C27
NODE=S032C27

$\Gamma(K^*(892)^+ \text{ anything}) / \Gamma_{\text{total}}$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.036	90	ABLIKIM	06U BES2	$e^+ e^-$ at 3773 MeV

NODE=S032R52
NODE=S032R52

$\Gamma(K^*(892)^0 \text{ anything}) / \Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.028±0.012±0.004	31 ± 12	ABLIKIM	05P BES	$e^+ e^- \approx 3773$ MeV

NODE=S032C28
NODE=S032C28

$\Gamma(\eta \text{ anything}) / \Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
9.5±0.4±0.8	4463 ± 197	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$

NODE=S032R6
NODE=S032R6
NODE=S032R6

$\Gamma(\eta' \text{ anything})/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{15}/Γ
2.48±0.17±0.21	299 ± 21	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$	NODE=S032R01 NODE=S032R01

 $\Gamma(\phi \text{ anything})/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{16}/Γ
1.05±0.08±0.07	368 ± 24	HUANG	06B CLEO	$e^+ e^-$ at $\psi(3770)$	NODE=S032S65 NODE=S032S65

• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.71^{+0.76}_{-0.71} \pm 0.17$	9	BAI	00C BES	$e^+ e^- \rightarrow D\bar{D}^*, D^*\bar{D}^*$	
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Semileptonic modes $\Gamma(K^- e^+ \nu_e)/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{18}/Γ
3.55±0.05 OUR FIT	Error includes scale factor of 1.2. [(3.55 ± 0.04) $\times 10^{-2}$ OUR 2012 FIT Scale factor = 1.2]				

3.50±0.05 OUR AVERAGE

$3.50 \pm 0.03 \pm 0.04$	14.1k	1 BESSON	09 CLEO	$e^+ e^-$ at $\psi(3770)$
$3.45 \pm 0.10 \pm 0.19$	1318 ± 38	2 WIDHALM	06 BELL	$e^+ e^- \approx \gamma(4S)$
$3.82 \pm 0.40 \pm 0.27$	104 ± 11	ABLIKIM	04C BES	$e^+ e^-$, 3.773 GeV
$3.4 \pm 0.5 \pm 0.4$	55	ADLER	89 MRK3	$e^+ e^-$ 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$3.56 \pm 0.03 \pm 0.09$	3 DOBBS	08 CLEO	See BESSON 09	
$3.44 \pm 0.10 \pm 0.10$	1311 ± 37	COAN	05 CLEO	See DOBBS 08

1 See the form-factor parameters near the end of this D^0 Listing.

2 The $\pi^- e^+ \nu_e$ and $K^- e^+ \nu_e$ results of WIDHALM 06 give $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+(^{\pi}(0))}{f_+(^K(0))}|^2 = 0.042 \pm 0.003 \pm 0.003$.

3 DOBBS 08 establishes $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+(^{\pi}(0))}{f_+(^K(0))}| = 0.188 \pm 0.008 \pm 0.002$ from the D^+ and D^0 decays to $\bar{K} e^+ \nu_e$ and $\pi e^+ \nu_e$.

 $\Gamma(K^- e^+ \nu_e)/\Gamma(K^- \pi^+)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{18}/Γ_{31}
0.915±0.011 OUR FIT	Error includes scale factor of 1.1.				

0.930±0.013 OUR AVERAGE

$0.927 \pm 0.007 \pm 0.012$	$76k \pm 323$	1 AUBERT	07BG BABR	$e^+ e^- \approx \gamma(4S)$
$0.978 \pm 0.027 \pm 0.044$	2510	2 BEAN	93C CLE2	$e^+ e^- \approx \gamma(4S)$
$0.90 \pm 0.06 \pm 0.06$	584	3 CRAWFORD	91B CLEO	$e^+ e^- \approx 10.5$ GeV
$0.91 \pm 0.07 \pm 0.11$	250	4 ANJOS	89F E691	Photoproduction

1 The event samples in this AUBERT 07BG result include radiative photons. The $D^0 \rightarrow K^- e^+ \nu_e$ form factor at $q^2 = 0$ is $f_+(0) = 0.727 \pm 0.007 \pm 0.005 \pm 0.007$.

2 BEAN 93C uses $K^- \mu^+ \nu_\mu$ as well as $K^- e^+ \nu_e$ events and makes a small phase-space adjustment to the number of the μ^+ events to use them as e^+ events. A pole mass of $2.00 \pm 0.12 \pm 0.18$ GeV/ c^2 is obtained from the q^2 dependence of the decay rate.

3 CRAWFORD 91B uses $K^- e^+ \nu_e$ and $K^- \mu^+ \nu_\mu$ candidates to measure a pole mass of $2.1^{+0.4}_{-0.2} {}^{+0.3}_{-0.2}$ GeV/ c^2 from the q^2 dependence of the decay rate.

4 ANJOS 89F measures a pole mass of $2.1^{+0.4}_{-0.2} \pm 0.2$ GeV/ c^2 from the q^2 dependence of the decay rate.

 $\Gamma(K^- \mu^+ \nu_\mu)/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{19}/Γ
3.31±0.13 OUR FIT	$[(3.30 \pm 0.13) \times 10^{-2}$ OUR 2012 FIT]				

3.45±0.10±0.21	1249 ± 43	WIDHALM	06 BELL	$e^+ e^- \approx \gamma(4S)$
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 $\Gamma(K^- \mu^+ \nu_\mu)/\Gamma(K^- \pi^+)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{19}/Γ_{31}
0.852±0.033 OUR FIT	$[0.853 \pm 0.033$ OUR 2012 FIT]				

0.84 ± 0.04 OUR AVERAGE

$0.852 \pm 0.034 \pm 0.028$	1897	1 FRABETTI	95G E687	$\gamma Be \bar{E}_\gamma = 220$ GeV
$0.82 \pm 0.13 \pm 0.13$	338	2 FRABETTI	93I E687	$\gamma Be \bar{E}_\gamma = 221$ GeV
$0.79 \pm 0.08 \pm 0.09$	231	3 CRAWFORD	91B CLEO	$e^+ e^- \approx 10.5$ GeV

NODE=S032R01
NODE=S032R01

NODE=S032S65
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NODE=S032R57;LINKAGE=DO

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NODE=S032R66;LINKAGE=B

NODE=S032R66;LINKAGE=C

NODE=S032R30
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NEW

NODE=S032B29
NODE=S032B29

NEW

¹ FRABETTI 95G extracts the ratio of form factors $f_-(0)/f_+(0) = -1.3^{+3.6}_{-3.4} \pm 0.6$, and measures a pole mass of $1.87^{+0.11+0.07}_{-0.08-0.06}$ GeV/ c^2 from the q^2 dependence of the decay rate.

² FRABETTI 93I measures a pole mass of $2.1^{+0.7+0.7}_{-0.3-0.3}$ GeV/ c^2 from the q^2 dependence of the decay rate.

³ CRAWFORD 91B measures a pole mass of $2.00 \pm 0.12 \pm 0.18$ GeV/ c^2 from the q^2 dependence of the decay rate.

$\Gamma(K^-\mu^+\nu_\mu)/\Gamma(\mu^+\text{anything})$ Γ_{19}/Γ_6

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.50 ± 0.05 OUR FIT				
0.472±0.051±0.040	232	KODAMA 94	E653	π^- emulsion 600 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.32 \pm 0.05 \pm 0.05$	124	KODAMA 91	EMUL	pA 800 GeV

$\Gamma(K^-\pi^0e^+\nu_e)/\Gamma_{\text{total}}$ Γ_{22}/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.016^{+0.013}_{-0.005}±0.002	4	¹ BAI	91	MRK3 $e^+e^- \approx 3.77$ GeV

¹ BAI 91 finds that a fraction $0.79^{+0.15+0.09}_{-0.17-0.03}$ of combined D^+ and D^0 decays to $\bar{K}\pi e^+\nu_e$ (24 events) are $\bar{K}^*(892)e^+\nu_e$. BAI 91 uses 56 $K^-\pi^+e^+\nu_e$ events to measure a pole mass of $1.8 \pm 0.3 \pm 0.2$ GeV/ c^2 from the q^2 dependence of the decay rate.

$\Gamma(\bar{K}^0\pi^-e^+\nu_e)/\Gamma_{\text{total}}$ Γ_{23}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
2.7^{+0.9}_{-0.7} OUR AVERAGE				

$2.61 \pm 1.04 \pm 0.28$	9 ± 3	ABLIKIM	060	BES2 e^+e^- at 3773 MeV
$2.8^{+1.7}_{-0.8} \pm 0.3$	6	¹ BAI	91	MRK3 $e^+e^- \approx 3.77$ GeV

¹ BAI 91 finds that a fraction $0.79^{+0.15+0.09}_{-0.17-0.03}$ of combined D^+ and D^0 decays to $\bar{K}\pi e^+\nu_e$ (24 events) are $\bar{K}^*(892)e^+\nu_e$.

$\Gamma(K^*(892)^-e^+\nu_e)/\Gamma_{\text{total}}$ Γ_{20}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
2.16±0.16 OUR FIT				

2.16^{+0.15}_{-0.08}±0.08	219 ± 16	¹ COAN	05	CLEO e^+e^- at $\psi(3770)$
1 COAN 05 uses both $K^-\pi^0$ and $K_S^0\pi^-$ events.				

$\Gamma(K^*(892)^-\pi^+\nu_e)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{20}/Γ_{35}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.76±0.07 OUR FIT [0.77 ± 0.07 OUR 2012 FIT]				

0.76^{+0.12}_{-0.06}±0.06	152	¹ BEAN	93C	CLE2 $e^+e^- \approx \gamma(4S)$
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¹ BEAN 93C uses $K^*\pi^+\nu_\mu$ as well as $K^*\pi^+\nu_e$ events and makes a small phase-space adjustment to the number of the μ^+ events to use them as e^+ events.

$\Gamma(K^*(892)^-\mu^+\nu_\mu)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{21}/Γ_{35}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.674^{+0.068}_{-0.026}±0.026				

¹ LINK 05B finds that in $D^0 \rightarrow \bar{K}^0\pi^-\mu^+\nu_\mu$ the $\bar{K}^0\pi^-$ system is 6% in S-wave.

$\Gamma(K^-\pi^+\pi^-e^+\nu_e)/\Gamma_{\text{total}}$ Γ_{24}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
2.8^{+1.4}_{-1.1}±0.3				

$\Gamma(K_1(1270)^-e^+\nu_e)/\Gamma_{\text{total}}$ Γ_{25}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
7.6^{+4.1}_{-3.0}±0.9				

¹ This ARTUSO 07A result is corrected for all decay modes of the $K_1(1270)^-$.

NODE=S032B29;LINKAGE=A

NODE=S032B29;LINKAGE=B

NODE=S032B29;LINKAGE=C

NODE=S032B17

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NODE=S032C38

NODE=S032C38

NODE=S032C38;LINKAGE=CO

NODE=S032B81

NODE=S032B81

NODE=S032B81

NEW

NODE=S032B81;LINKAGE=A

NODE=S032Q01

NODE=S032Q01

NODE=S032Q01

NODE=S032Q01;LINKAGE=LI

NODE=S032R06

NODE=S032R06

NODE=S032R07

NODE=S032R07

NODE=S032R07;LINKAGE=AR

$\Gamma(K^-\pi^+\pi^-\mu^+\nu_\mu)/\Gamma(K^-\mu^+\nu_\mu)$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.037	90	KODAMA	93B E653	π^- emulsion 600 GeV

 Γ_{26}/Γ_{19} NODE=S032B74
NODE=S032B74 $\Gamma((\bar{K}^*(892)\pi)^-\mu^+\nu_\mu)/\Gamma(K^-\mu^+\nu_\mu)$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.043	90	1 KODAMA	93B E653	π^- emulsion 600 GeV

 Γ_{27}/Γ_{19} NODE=S032B75
NODE=S032B75

1 KODAMA 93B searched in $K^-\pi^+\pi^-\mu^+\nu_\mu$, but the limit includes other $(\bar{K}^*(892)\pi)^-$ charge states.

 $\Gamma(\pi^-e^+\nu_e)/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
0.289±0.008 OUR FIT				Error includes scale factor of 1.1.

0.287±0.008 OUR AVERAGE

0.288±0.008±0.003	1374	1 BESSON	09 CLEO	e^+e^- at $\psi(3770)$
0.279±0.027±0.016	126 ± 12	2 WIDHALM	06 BELL	$e^+e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.299±0.011±0.009		3 DOBBS	08 CLEO	See BESSON 09
0.262±0.025±0.008	117 ± 11	COAN	05 CLEO	See DOBBS 08

1 See the form-factor parameters near the end of this D^0 Listing.

2 The $\pi^-e^+\nu_e$ and $K^-\pi^+\nu_e$ results of WIDHALM 06 give $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.042 \pm 0.003 \pm 0.003$.

3 DOBBS 08 establishes $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}| = 0.188 \pm 0.008 \pm 0.002$ from the D^+ and D^0 decays to $\bar{K}e^+\nu_e$ and $\pi e^+\nu_e$.

 $\Gamma(\pi^-e^+\nu_e)/\Gamma(K^-\pi^+\nu_e)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.0814±0.0025 OUR FIT				Error includes scale factor of 1.1.

0.085 ±0.007 OUR AVERAGE

0.082 ± 0.006 ± 0.005		1 HUANG	05 CLEO	$e^+e^- \approx \gamma(4S)$
0.101 ± 0.020 ± 0.003	91	2 FRABETTI	96B E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV
0.103 ± 0.039 ± 0.013	87	3 BUTLER	95 CLE2	< 0.156 (90% CL)

1 HUANG 05 uses both e and μ events, and makes a small correction to the μ events to make them effectively e events. This result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.038^{+0.006}_{-0.007} {}^{+0.005}_{-0.003}$.

2 FRABETTI 96B uses both e and μ events, and makes a small correction to the μ events to make them effectively e events. This result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.050 \pm 0.011 \pm 0.002$.

3 BUTLER 95 has $87 \pm 33 \pi^-e^+\nu_e$ events. The result gives $|\frac{V_{cd}}{V_{cs}} \cdot \frac{f_+^\pi(0)}{f_+^K(0)}|^2 = 0.052 \pm 0.020 \pm 0.007$.

 $\Gamma(\pi^-\mu^+\nu_\mu)/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
0.237±0.024 OUR FIT				

0.231±0.026±0.019

106 ± 13		WIDHALM	06 BELL	$e^+e^- \approx \gamma(4S)$
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 Γ_{29}/Γ_{19} NODE=S032S25
NODE=S032S25 $\Gamma(\pi^-\mu^+\nu_\mu)/\Gamma(K^-\mu^+\nu_\mu)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.072±0.007 OUR FIT				

0.074±0.008±0.007

288 ± 29		1 LINK	05 FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV
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1 LINK 05 finds the form-factor ratio $|f_0^\pi(0)/f_0^K(0)|$ to be $0.85 \pm 0.04 \pm 0.04 \pm 0.01$.

 Γ_{29}/Γ_{19} NODE=S032S96
NODE=S032S96 $\Gamma(\rho^-\pi^+\nu_\mu)/\Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
0.194±0.039±0.013	31 ± 6	COAN	05 CLEO	e^+e^- at $\psi(3770)$

 Γ_{30}/Γ NODE=S032C39
NODE=S032C39

———— Hadronic modes with a single \bar{K} ————

NODE=S032320

$\Gamma(K^-\pi^+)/\Gamma_{\text{total}}$		Γ_{31}/Γ			
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
3.88 ± 0.05 OUR FIT	Error includes scale factor of 1.1.				
3.91 ± 0.05 OUR AVERAGE	Error includes scale factor of 1.1.				
4.007 ± 0.037 ± 0.072	33.8 ± 0.3k	AUBERT	08L BABR	e^+e^- at $\Upsilon(4S)$	
3.891 ± 0.035 ± 0.069		1 DOBBS	07 CLEO	e^+e^- at $\psi(3770)$	
3.82 ± 0.07 ± 0.12		2 ARTUSO	98 CLE2	CLEO average	OCCUR=3
3.90 ± 0.09 ± 0.12	5392	3 BARATE	97C ALEP	From Z decays	
3.41 ± 0.12 ± 0.28	1173 ± 37	3 ALBRECHT	94F ARG	$e^+e^- \approx \Upsilon(4S)$	
3.62 ± 0.34 ± 0.44		3 DECOMP	91J ALEP	From Z decays	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.91 ± 0.08 ± 0.09	10.3k ± 100	1 HE	05 CLEO	See DOBBS 07	
3.81 ± 0.15 ± 0.16	1165	4 ARTUSO	98 CLE2	e^+e^- at $\Upsilon(4S)$	OCCUR=2
3.69 ± 0.11 ± 0.16		5 COAN	98 CLE2	See ARTUSO 98	
4.5 ± 0.6 ± 0.4		6 ALBRECHT	94 ARG	$e^+e^- \approx \Upsilon(4S)$	
3.95 ± 0.08 ± 0.17	4208	3,7 AKERIB	93 CLE2	See ARTUSO 98	
4.5 ± 0.8 ± 0.5	56	3 ABACHI	88 HRS	e^+e^- 29 GeV	
4.2 ± 0.4 ± 0.4	930	ADLER	88C MRK3	e^+e^- 3.77 GeV	
4.1 ± 0.6	263 ± 17	8 SCHINDLER	81 MRK2	e^+e^- 3.771 GeV	
4.3 ± 1.0	130	9 PERUZZI	77 LGW	e^+e^- 3.77 GeV	

¹ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

² This combines the CLEO results of ARTUSO 98, COAN 98, and AKERIB 93.

³ ABACHI 88, DECOMP 91J, AKERIB 93, ALBRECHT 94F, and BARATE 97C use $D^*(2010)^+ \rightarrow D^0\pi^+$ decays. The π^+ is both slow and of low p_T with respect to the event thrust axis or nearest jet ($\approx D^{*+}$ direction). The excess number of such π^+ 's over background gives the number of $D^*(2010)^+ \rightarrow D^0\pi^+$ events, and the fraction with $D^0 \rightarrow K^-\pi^+$ gives the $D^0 \rightarrow K^-\pi^+$ branching fraction.

⁴ ARTUSO 98, following ALBRECHT 94, uses D^0 mesons from $\bar{B}^0 \rightarrow D^*(2010)^+ X \ell^-\bar{\nu}_\ell$ decays. Our average uses the CLEO average of this value with the values of COAN 98 and AKERIB 93.

⁵ COAN 98 assumes that $\Gamma(B \rightarrow \bar{D}X\ell^+\nu)/\Gamma(B \rightarrow X\ell^+\nu) = 1.0 - 3|V_{ub}/V_{cb}|^2 - 0.010 \pm 0.005$, the last term accounting for $\bar{B} \rightarrow D_s^+ K X \ell^-\bar{\nu}$. COAN 98 is included in the CLEO average in ARTUSO 98.

⁶ ALBRECHT 94 uses D^0 mesons from $\bar{B}^0 \rightarrow D^{*+}\ell^-\bar{\nu}_\ell$ decays. This is a different set of events than used by ALBRECHT 94F.

⁷ This AKERIB 93 value includes radiative corrections; without them, the value is $0.0391 \pm 0.0008 \pm 0.0017$. AKERIB 93 is included in the CLEO average in ARTUSO 98.

⁸ SCHINDLER 81 (MARK-2) measures $\sigma(e^+e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.24 ± 0.02 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.

⁹ PERUZZI 77 (MARK-1) measures $\sigma(e^+e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.25 ± 0.05 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.

$\Gamma(K^+\pi^-)/\Gamma(K^-\pi^+)$		Γ_{32}/Γ_{31}			
VALUE (units 10^{-3})		DOCUMENT ID	TECN	COMMENT	
3.52 ± 0.15		¹ AAIJ	13N LHCb	pp at 7 TeV	

¹ Based on 1 fb^{-1} of data collected at $\sqrt{s} = 7 \text{ TeV}$ in 2011. Assumes no CP violation.

$\Gamma(K_S^0\pi^0)/\Gamma_{\text{total}}$		Γ_{33}/Γ			
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					

1.240 ± 0.017 ± 0.056 614 HE 08 CLEO See MENDEZ 10

$\Gamma(K_S^0\pi^0)/\Gamma(K^-\pi^+)$		Γ_{33}/Γ_{31}			
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					

0.68 ± 0.12 ± 0.11 119 ANJOS 92B E691 γBe 80–240 GeV

$\Gamma(K_S^0\pi^0)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$		$\Gamma_{33}/(\Gamma_{31} + \Gamma_{222})$			
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
30.5 ± 0.9 OUR FIT					
30.4 ± 0.3 ± 0.9	20k	MENDEZ	10	CLEO e^+e^- at 3774 MeV	

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OCCUR=3

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NODE=S032R12;LINKAGE=KL

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NODE=S032R12;LINKAGE=B

NODE=S032R12;LINKAGE=SP

NODE=S032R12;LINKAGE=PS

NODE=S032Q25
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NODE=S032Q25;LINKAGE=AI

NODE=S032S06
NODE=S032S06

NODE=S032B55
NODE=S032B55

NODE=S032S18

NODE=S032S18

$\Gamma(K_S^0 \pi^0)/\Gamma(K_S^0 \pi^+ \pi^-)$		Γ_{33}/Γ_{35}			
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
0.420±0.029 OUR FIT [0.421 ± 0.029 OUR 2012 FIT]					
0.44 ± 0.02 ± 0.05	1942 ± 64	PROCARIO 93B	CLE2	$e^+ e^-$ 10.36–10.7 GeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.34 ± 0.04 ± 0.02	92	¹ ALBRECHT 92P	ARG	$e^+ e^- \approx 10$ GeV	
0.36 ± 0.04 ± 0.08	104	KINOSHITA 91	CLEO	$e^+ e^- \sim 10.7$ GeV	

¹ This value is calculated from numbers in Table 1 of ALBRECHT 92P.

$\Gamma(K_L^0 \pi^0)/\Gamma_{\text{total}}$		Γ_{34}/Γ			
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
0.998±0.049±0.048	1116	¹ HE	08	CLEO $e^+ e^-$ at $\psi(3770)$	

1 The difference of HE 08 $D^0 \rightarrow K_S^0 \pi^0$ and $K_L^0 \pi^0$ branching fractions over the sum is $0.108 \pm 0.025 \pm 0.024$. This is consistent with U-spin symmetry and the Cabibbo angle.

$\Gamma(K_S^0 \pi^+ \pi^-)/\Gamma_{\text{total}}$		Γ_{35}/Γ			
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.52±0.20±0.25	284 ± 22	¹ ALBRECHT 94F	ARG	$e^+ e^- \approx \gamma(4S)$	
3.2 ± 0.3 ± 0.5		ADLER 87	MRK3	$e^+ e^-$ 3.77 GeV	
2.6 ± 0.8	32 ± 8	² SCHINDLER 81	MRK2	$e^+ e^-$ 3.771 GeV	
4.0 ± 1.2	28	³ PERUZZI 77	LGW	$e^+ e^-$ 3.77 GeV	

¹ See the footnote on the ALBRECHT 94F measurement of $\Gamma(K^- \pi^+)/\Gamma_{\text{total}}$ for the method used.

² SCHINDLER 81 (MARK-2) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.30 ± 0.08 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.

³ PERUZZI 77 (MARK-1) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.46 ± 0.12 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.

$\Gamma(K_S^0 \pi^+ \pi^-)/\Gamma(K^- \pi^+)$		Γ_{35}/Γ_{31}			
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
0.73±0.05 OUR FIT	Error includes scale factor of 1.1. Scale factor = 1.1]		[0.73 ± 0.05 OUR 2012 FIT		
0.81±0.05±0.08	856 ± 35	FRABETTI 94J	E687	γ Be $\bar{E}_\gamma = 220$ GeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.85±0.40	35	AVERY 80	SPEC	$\gamma N \rightarrow D^*+$	
1.4 ± 0.5	116	PICCOLO 77	MRK1	$e^+ e^-$ 4.03, 4.41 GeV	

$\Gamma(K_S^0 \rho^0)/\Gamma(K_S^0 \pi^+ \pi^-)$		Γ_{36}/Γ_{35}			
This is the “fit fraction” from the Dalitz-plot analysis.					
VALUE	DOCUMENT ID	TECN	COMMENT		
0.224±0.017 OUR AVERAGE	Error includes scale factor of 1.7.				

0.210±0.016		¹ AUBERT 08AL	BABR	Dalitz fit, ≈ 487 k evts	
0.264±0.009 ^{+0.010} _{-0.026}		MURAMATSU 02	CLE2	Dalitz fit, 5299 evts	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.267±0.011 ^{+0.009} _{-0.028}		ASNER 04A	CLEO	See MURAMATSU 02	
0.350±0.028±0.067		FRABETTI 94G	E687	Dalitz fit, 597 evts	
0.227±0.032±0.009		ALBRECHT 93D	ARG	Dalitz fit, 440 evts	
0.215±0.051±0.037		ANJOS 93	E691	γ Be 90–260 GeV	
0.20 ± 0.06 ± 0.03		FRABETTI 92B	E687	γ Be, $\bar{E}_\gamma = 221$ GeV	
0.12 ± 0.01 ± 0.07		ADLER 87	MRK3	$e^+ e^-$ 3.77 GeV	

¹ The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

$\Gamma(K_S^0 \omega, \omega \rightarrow \pi^+ \pi^-)/\Gamma(K_S^0 \pi^+ \pi^-)$		Γ_{37}/Γ_{35}			
This is the “fit fraction” from the Dalitz-plot analysis.					
VALUE	DOCUMENT ID	TECN	COMMENT		
0.0073±0.0020 OUR AVERAGE	Error includes scale factor of 1.7.				

0.009 ± 0.010		¹ AUBERT 08AL	BABR	Dalitz fit, ≈ 487 k evts	
0.0072±0.0018 ^{+0.0010} _{-0.0009}		MURAMATSU 02	CLE2	Dalitz fit, 5299 evts	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0081±0.0019 ^{+0.0018} _{-0.0010}		ASNER 04A	CLEO	See MURAMATSU 02	

¹ The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B14
NODE=S032B14
NEW

NODE=S032B14;LINKAGE=AP

NODE=S032S07
NODE=S032S07

NODE=S032S07;LINKAGE=HE

NODE=S032R21
NODE=S032R21

NODE=S032R21;LINKAGE=E

NODE=S032R21;LINKAGE=SP

NODE=S032R21;LINKAGE=PS

NODE=S032R28
NODE=S032R28

NEW

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NODE=S032B59
NODE=S032B59

NODE=S032B59;LINKAGE=AU

NODE=S032S95
NODE=S032S95
NODE=S032S95

NODE=S032S95;LINKAGE=AU

$\Gamma(K_S^0(\pi^+\pi^-)_{S\text{-wave}})/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{38}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis. The $(\pi^+\pi^-)_{S\text{-wave}}$ includes what in isobar models are the $f_0(980)$ and $f_0(1370)$; see the following two data blocks.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.119±0.026	¹ AUBERT	08AL BABR	Dalitz fit, ≈ 487 k evts

¹ The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

 $\Gamma(K_S^0 f_0(980), f_0(980) \rightarrow \pi^+\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{39}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.043±0.005^{+0.012}_{-0.006}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.042±0.005 ^{+0.011} _{-0.005}	ASNER	04A CLEO	See MURAMATSU 02
0.068±0.016±0.018	FRABETTI	94G E687	Dalitz fit, 597 evts
0.046±0.018±0.006	ALBRECHT	93D ARG	Dalitz fit, 440 evts

 $\Gamma(K_S^0 f_0(1370), f_0(1370) \rightarrow \pi^+\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{40}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.099±0.011^{+0.028}_{-0.044}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.098±0.014 ^{+0.026} _{-0.036}	ASNER	04A CLEO	See MURAMATSU 02
0.077±0.022±0.031	FRABETTI	94G E687	Dalitz fit, 597 evts
0.082±0.028±0.013	ALBRECHT	93D ARG	Dalitz fit, 440 evts

 $\Gamma(K_S^0 f_2(1270), f_2(1270) \rightarrow \pi^+\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{41}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.0032^{+0.0035}_{-0.0022} OUR AVERAGE			

0.006 ± 0.007	¹ AUBERT	08AL BABR	Dalitz fit, ≈ 487 k evts
0.0027±0.0015 ^{+0.0037} _{-0.0017}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.0036±0.0022 ^{+0.0032} _{-0.0019}	ASNER	04A CLEO	See MURAMATSU 02
0.037 ± 0.014 ± 0.017	FRABETTI	94G E687	Dalitz fit, 597 evts
0.050 ± 0.021 ± 0.008	ALBRECHT	93D ARG	Dalitz fit, 440 evts

¹ The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032C74

NODE=S032C74

NODE=S032C74

NODE=S032C74;LINKAGE=AU

NODE=S032B76

NODE=S032B76

NODE=S032B76

NODE=S032B78

NODE=S032B78

NODE=S032B78

NODE=S032B77

NODE=S032B77

NODE=S032B77

NODE=S032B77;LINKAGE=AU

NODE=S032B58

NODE=S032B58

NODE=S032B58

 $\Gamma(K^*(892)^-\pi^+, K^*(892)^- \rightarrow K_S^0\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{42}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.588^{+0.034}_{-0.050} OUR AVERAGE			Error includes scale factor of 2.0.

0.557±0.028	¹ AUBERT	08AL BABR	Dalitz fit, ≈ 487 k evts
0.657±0.013 ^{+0.018} _{-0.040}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.663±0.013 ^{+0.024} _{-0.043}	ASNER	04A CLEO	See MURAMATSU 02
0.625±0.036±0.026	FRABETTI	94G E687	Dalitz fit, 597 evts
0.718±0.042±0.030	ALBRECHT	93D ARG	Dalitz fit, 440 evts
0.480±0.097	ANJOS	93 E691	γ Be 90–260 GeV
0.56 ± 0.04 ± 0.05	ADLER	87 MRK3	e ⁺ e ⁻ 3.77 GeV

¹ The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B58;LINKAGE=AU

$\Gamma(K_0^*(1430)^-\pi^+, K_0^*(1430)^-\rightarrow K_S^0\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{43}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
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0.095^{+0.014}_{-0.010} OUR AVERAGE

0.102 \pm 0.015	¹ AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts
0.073 \pm 0.007 ^{+0.031} _{-0.011}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.072 \pm 0.007 ^{+0.014} _{-0.013}	ASNER	04A CLEO	See MURAMATSU 02
0.109 \pm 0.027 \pm 0.029	FRABETTI	94G E687	Dalitz fit, 597 evts
0.129 \pm 0.034 \pm 0.021	ALBRECHT	93D ARG	Dalitz fit, 440 evts

¹The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B79

NODE=S032B79

NODE=S032B79

 $\Gamma(K_2^*(1430)^-\pi^+, K_2^*(1430)^-\rightarrow K_S^0\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{44}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
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0.0120^{+0.0070}_{-0.0035} OUR AVERAGE

0.022 \pm 0.016	¹ AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts
0.011 \pm 0.002 ^{+0.007} _{-0.003}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.011 \pm 0.002 ^{+0.005} _{-0.003}	ASNER	04A CLEO	See MURAMATSU 02
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¹The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032B79;LINKAGE=AU

NODE=S032B80

NODE=S032B80

NODE=S032B80

 $\Gamma(K^*(1680)^-\pi^+, K^*(1680)^-\rightarrow K_S^0\pi^-)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{45}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
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0.016 \pm 0.013 OUR AVERAGE

0.007 \pm 0.019	¹ AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts
0.022 \pm 0.004 ^{+0.018} _{-0.015}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.023 \pm 0.005 ^{+0.007} _{-0.014}	ASNER	04A CLEO	See MURAMATSU 02
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¹The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032C26

NODE=S032C26

NODE=S032C26

 $\Gamma(K^*(892)^+\pi^-, K^*(892)^+\rightarrow K_S^0\pi^+)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{46}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
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4.0^{+2.0}_{-1.2} OUR AVERAGE

4.6 \pm 2.3	¹ AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts
3.4 \pm 1.3 ^{+4.1} _{-0.4}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

3.4 \pm 1.3 ^{+3.6} _{-0.5}	ASNER	04A CLEO	See MURAMATSU 02
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¹The error on this AUBERT 08AL value includes both statistical and systematic uncertainties; the latter dominates.

NODE=S032C26;LINKAGE=AU

NODE=S032S94

NODE=S032S94

NODE=S032S94

 $\Gamma(K_0^*(1430)^+\pi^-, K_0^*(1430)^+\rightarrow K_S^0\pi^+)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{47}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<5 \times 10^{-4}$	95	AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts

NODE=S032C72

NODE=S032C72

NODE=S032C72

 $\Gamma(K_2^*(1430)^+\pi^-, K_2^*(1430)^+\rightarrow K_S^0\pi^+)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{48}/Γ_{35}

This is the "fit fraction" from the Dalitz-plot analysis. This is a doubly Cabibbo-suppressed mode.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<1.2 \times 10^{-3}$	95	AUBERT	08AL BABR	Dalitz fit, \approx 487 k evts

NODE=S032C73

NODE=S032C73

NODE=S032C73

$\Gamma(K_S^0 \pi^+ \pi^- \text{ nonresonant})/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{49}/Γ_{35}

This is the “fit fraction” from the Dalitz-plot analysis. Neither FRABETTI 94G nor ALBRECHT 93D (quoted in many of the earlier submodes of $K_S^0 \pi^+ \pi^-$) sees evidence for a nonresonant component.

VALUE	DOCUMENT ID	TECN	COMMENT
0.009 ± 0.004 ^{+0.020} _{-0.004}	MURAMATSU 02	CLE2	Dalitz fit, 5299 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.007 ± 0.007	ASNER	04A CLEO	See MURAMATSU 02
0.263 ± 0.024 ± 0.041	ANJOS	93 E691	γ Be 90–260 GeV
0.26 ± 0.08 ± 0.05	FRABETTI	92B E687	γ Be, $\bar{E}_\gamma = 221$ GeV
0.33 ± 0.05 ± 0.10	ADLER	87 MRK3	$e^+ e^-$ 3.77 GeV

 $\Gamma(K^- \pi^+ \pi^0)/\Gamma_{\text{total}}$ Γ_{50}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
13.9 ± 0.5 OUR FIT		Error includes scale factor of 1.7.		

14.57 ± 0.12 ± 0.38	¹ DOBBS	07 CLEO	$e^+ e^-$ at $\psi(3770)$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

14.9 ± 0.3 ± 0.5	19k ± 150	¹ HE	05 CLEO	See DOBBS 07
13.3 ± 1.2 ± 1.3	931	ADLER	88C MRK3	$e^+ e^-$ 3.77 GeV
11.7 ± 4.3	37	² SCHINDLER	81 MRK2	$e^+ e^-$ 3.771 GeV

¹ DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.

² SCHINDLER 81 (MARK-2) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.68 ± 0.23 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.

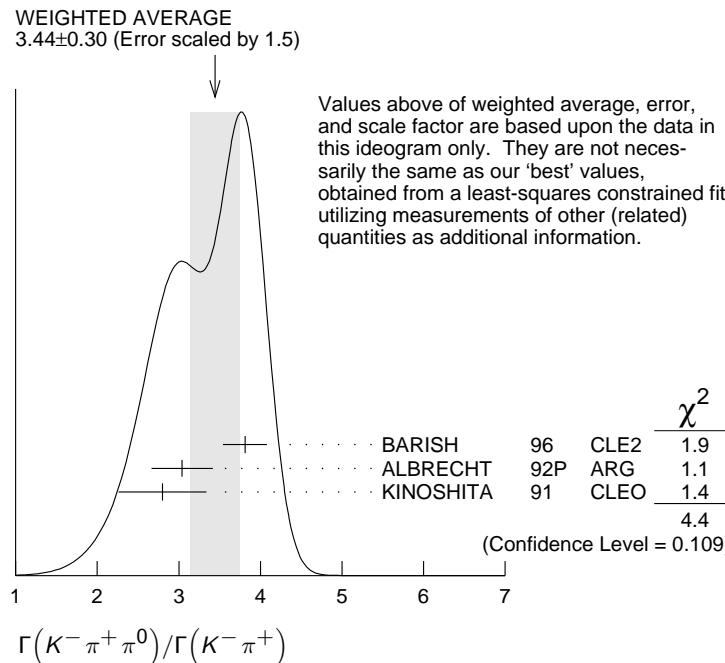
 $\Gamma(K^- \pi^+ \pi^0)/\Gamma(K^- \pi^+)$ Γ_{50}/Γ_{31}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
3.58 ± 0.14 OUR FIT		Error includes scale factor of 1.9. Scale factor = 1.9]	[3.58 ± 0.14 OUR 2012 FIT	

3.44 ± 0.30 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.

3.81 ± 0.07 ± 0.26	10k	BARISH	96 CLE2	$e^+ e^- \approx \Gamma(4S)$
3.04 ± 0.16 ± 0.34	931	¹ ALBRECHT	92P ARG	$e^+ e^- \approx 10$ GeV
2.8 ± 0.14 ± 0.52	1050	KINOSHITA	91 CLEO	$e^+ e^- \sim 10.7$ GeV

¹ This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K_S^0 \pi^+ \pi^- \text{ nonresonant})/\Gamma(K_S^0 \pi^+ \pi^-)$

NODE=S032B57

NODE=S032B57

NODE=S032B57

 Γ_{49}/Γ_{35}

NODE=S032R19

NODE=S032R19

NODE=S032R19

 $\Gamma(K^- \pi^+ \pi^0)/\Gamma_{\text{total}}$

NODE=S032R19;LINKAGE=HE

NODE=S032R19;LINKAGE=SP

NODE=S032R47

NODE=S032R47

NEW

NODE=S032R47;LINKAGE=AP

$\Gamma(K^-\rho^+)/\Gamma(K^-\pi^+\pi^0)$

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.78 ± 0.04 OUR AVERAGE			
0.788±0.019±0.048	KOPP	01	CLE2 Dalitz fit, ≈ 7,000 evts
0.765±0.041±0.054	FRABETTI	94G	E687 Dalitz fit, 530 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.647±0.039±0.150	ANJOS	93	E691 γ Be 90–260 GeV
0.81 ± 0.03 ± 0.06	ADLER	87	MRK3 e^+e^- 3.77 GeV

 Γ_{51}/Γ_{50}

NODE=S032R48
NODE=S032R48
NODE=S032R48

 $\Gamma(K^-\rho(1700)^+, \rho(1700)^+ \rightarrow \pi^+\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{52}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.057±0.008±0.009			

NODE=S032C1
NODE=S032C1
NODE=S032C1

 $\Gamma(K^*(892)^-, K^*(892)^- \rightarrow K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{53}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.160±0.025 OUR AVERAGE			

NODE=S032S16
NODE=S032S16
NODE=S032S16

0.161±0.007^{+0.027}_{-0.011}

KOPP 01 CLE2 Dalitz fit, ≈ 7,000 evts

0.148±0.028±0.049

FRABETTI 94G E687 Dalitz fit, 530 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.084±0.011±0.012

ANJOS 93 E691 γ Be 90–260 GeV

0.12 ± 0.02 ± 0.03

ADLER 87 MRK3 e^+e^- 3.77 GeV $\Gamma(\bar{K}^*(892)^0\pi^0, \bar{K}^*(892)^0 \rightarrow K^-\pi^+)/\Gamma(K^-\pi^+\pi^0)$ Γ_{54}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.135±0.016 OUR AVERAGE			

NODE=S032S17
NODE=S032S17
NODE=S032S17

0.127±0.009±0.016

KOPP 01 CLE2 Dalitz fit, ≈ 7,000 evts

0.165±0.031±0.015

FRABETTI 94G E687 Dalitz fit, 530 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.142±0.018±0.024

ANJOS 93 E691 γ Be 90–260 GeV

0.13 ± 0.02 ± 0.03

ADLER 87 MRK3 e^+e^- 3.77 GeV $\Gamma(K_0^*(1430)^-\pi^+, K_0^*(1430)^- \rightarrow K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{55}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.033±0.006±0.014			

NODE=S032C2
NODE=S032C2
NODE=S032C2

 $\Gamma(\bar{K}_0^*(1430)^0\pi^0, \bar{K}_0^*(1430)^0 \rightarrow K^-\pi^+)/\Gamma(K^-\pi^+\pi^0)$ Γ_{56}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.041±0.006^{+0.032}_{-0.009}			

NODE=S032C3
NODE=S032C3
NODE=S032C3

 $\Gamma(K^*(1680)^-\pi^+, K^*(1680)^- \rightarrow K^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{57}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.013±0.003±0.004			

NODE=S032C4
NODE=S032C4
NODE=S032C4

 $\Gamma(K^-\pi^+\pi^0 \text{ nonresonant})/\Gamma(K^-\pi^+\pi^0)$ Γ_{58}/Γ_{50}

This is the "fit fraction" from the Dalitz-plot analysis.

VALUE	DOCUMENT ID	TECN	COMMENT
0.080±0.040 OUR AVERAGE			

NODE=S032R51
NODE=S032R51
NODE=S032R51

0.075±0.009^{+0.056}_{-0.011}

KOPP 01 CLE2 Dalitz fit, ≈ 7,000 evts

0.101±0.033±0.040

FRABETTI 94G E687 Dalitz fit, 530 evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.036±0.004±0.018

ANJOS 93 E691 γ Be 90–260 GeV

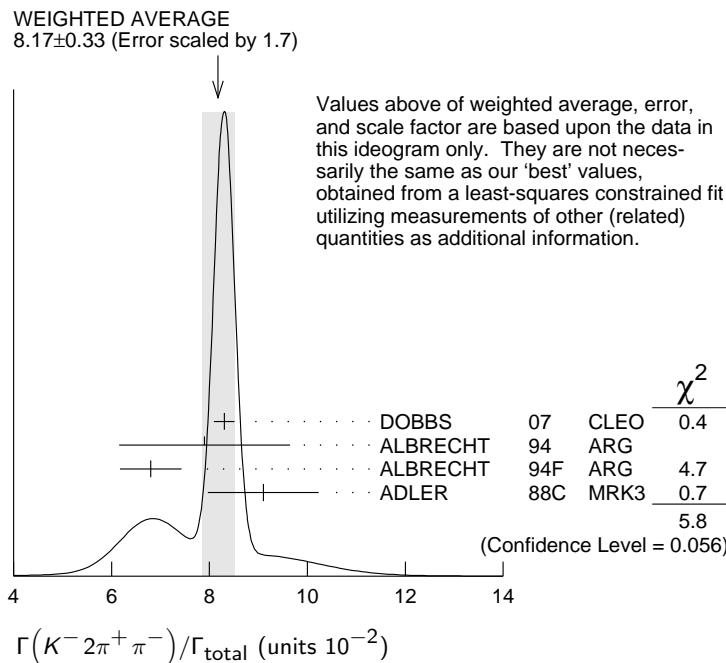
0.09 ± 0.02 ± 0.04

ADLER 87 MRK3 e^+e^- 3.77 GeV

0.51 ± 0.22

SUMMERS 84 E691 Photoproduction

$\Gamma(K_S^0 2\pi^0)/\Gamma_{\text{total}}$	Γ_{59}/Γ	NODE=S032C01 NODE=S032C01
<u>VALUE (units 10^{-3})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>
9.1 ± 1.1 OUR AVERAGE	Error includes scale factor of 2.2.	
10.58 ± 0.38 ± 0.73	1259	LOWREY 11 CLEO $e^+ e^- \approx 3.77 \text{ GeV}$
8.34 ± 0.45 ± 0.42		ASNER 08 CLEO $e^+ e^- \rightarrow D^0 \bar{D}^0, 3.77 \text{ GeV}$
$\Gamma(K_S^0(2\pi^0)\text{-S-wave})/\Gamma(K_S^0 2\pi^0)$	Γ_{60}/Γ_{59}	NODE=S032Q10 NODE=S032Q10
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
28.9 ± 6.3 ± 3.1	LOWREY	11 CLEO Dalitz analysis, 1259 evts
$\Gamma(\bar{K}^*(892)^0 \pi^0, \bar{K}^*(892)^0 \rightarrow K_S^0 \pi^0)/\Gamma(K_S^0 \pi^0)$	Γ_{61}/Γ_{33}	NODE=S032B68 NODE=S032B68
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
65.6 ± 5.3 ± 2.5	LOWREY	11 CLEO Dalitz analysis, 1259 evts
• • • We do not use the following data for averages, fits, limits, etc. • • •		
55 $\begin{array}{l} +13 \\ -10 \end{array}$ ± 7	PROCARIO	93B CLE2 Dalitz plot fit, 122 evts
$\Gamma(\bar{K}^*(1430)^0 \pi^0, \bar{K}^{*0} \rightarrow K_S^0 \pi^0)/\Gamma(K_S^0 2\pi^0)$	Γ_{62}/Γ_{59}	NODE=S032Q11 NODE=S032Q11
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
0.49 ± 0.45 ± 2.51	LOWREY	11 CLEO Dalitz analysis, 1259 evts
$\Gamma(\bar{K}^*(1680)^0 \pi^0, \bar{K}^{*0} \rightarrow K_S^0 \pi^0)/\Gamma(K_S^0 2\pi^0)$	Γ_{63}/Γ_{59}	NODE=S032Q12 NODE=S032Q12
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
11.2 ± 2.7 ± 2.5	LOWREY	11 CLEO Dalitz analysis, 1259 evts
$\Gamma(K_S^0 f_2(1270), f_2 \rightarrow 2\pi^0)/\Gamma(K_S^0 2\pi^0)$	Γ_{64}/Γ_{59}	NODE=S032Q13 NODE=S032Q13
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
2.48 ± 0.91 ± 0.78	LOWREY	11 CLEO Dalitz analysis, 1259 evts
$\Gamma(2K_S^0, \text{one } K_S^0 \rightarrow 2\pi^0)/\Gamma(K_S^0 2\pi^0)$	Γ_{65}/Γ_{59}	NODE=S032Q14 NODE=S032Q14
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
3.46 ± 0.92 ± 0.66	LOWREY	11 CLEO Dalitz analysis, 1259 evts
$\Gamma(K_S^0 2\pi^0 \text{ nonresonant})/\Gamma(K_S^0 \pi^0)$	Γ_{66}/Γ_{33}	NODE=S032B70 NODE=S032B70
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •		
0.37 ± 0.08 ± 0.04	PROCARIO	93B CLE2 Dalitz plot fit, 122 evts
$\Gamma(K^- 2\pi^+ \pi^-)/\Gamma_{\text{total}}$	Γ_{67}/Γ	NODE=S032R24 NODE=S032R24
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>
8.08 $\begin{array}{l} +0.21 \\ -0.19 \end{array}$ OUR FIT	Error includes scale factor of 1.3. $[(8.07 \begin{array}{l} +0.21 \\ -0.19 \end{array}) \times 10^{-2}$ OUR 2012 FIT Scale factor = 1.3]	
8.17 ± 0.33 OUR AVERAGE	Error includes scale factor of 1.7. See the ideogram below.	
8.30 ± 0.07 ± 0.20	1 DOBBS	07 CLEO $e^+ e^-$ at $\psi(3770)$
7.9 ± 1.5 ± 0.9	2 ALBRECHT	94 ARG $e^+ e^- \approx \Upsilon(4S)$
6.80 ± 0.27 ± 0.57	1430 ± 52	3 ALBRECHT 94F ARG $e^+ e^- \approx \Upsilon(4S)$
9.1 ± 0.8 ± 0.8	992 ADLER	88C MRK3 $e^+ e^-$ 3.77 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •		
8.3 ± 0.2 ± 0.3	15k ± 130	1 HE 05 CLEO See DOBBS 07
11.7 ± 2.5	185	4 SCHINDLER 81 MRK2 $e^+ e^-$ 3.771 GeV
6.2 ± 1.9	44	5 PERUZZI 77 LGW $e^+ e^-$ 3.77 GeV
1	DOBBS 07 and HE 05 use single- and double-tagged events in an overall fit. DOBBS 07 supersedes HE 05.	
2	ALBRECHT 94 uses D^0 mesons from $\bar{B}^0 \rightarrow D^* + \ell^- \bar{\nu}_\ell$ decays. This is a different set of events than used by ALBRECHT 94F.	
3	See the footnote on the ALBRECHT 94F measurement of $\Gamma(K^- \pi^+)/\Gamma_{\text{total}}$ for the method used.	
4	SCHINDLER 81 (MARK-2) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.68 ± 0.11 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.	
5	PERUZZI 77 (MARK-1) measures $\sigma(e^+ e^- \rightarrow \psi(3770)) \times$ branching fraction to be 0.36 ± 0.10 nb. We use the MARK-3 (ADLER 88C) value of $\sigma = 5.8 \pm 0.5 \pm 0.6$ nb.	



$\Gamma(K^- 2\pi^+ \pi^-)/\Gamma(K^- \pi^+)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
2.08±0.05 OUR FIT				Error includes scale factor of 1.6.
1.97±0.09 OUR AVERAGE				
1.94±0.07 ^{+0.09} _{-0.11}		JUN	00	SELX Σ^- nucleus, 600 GeV
1.7 ± 0.2 ± 0.2	1745	ANJOS	92C E691	γ Be 90–260 GeV
1.90±0.25±0.20	337	ALVAREZ	91B NA14	Photoproduction
2.12±0.16±0.09		BORTOLETTI088	CLEO	$e^+ e^-$ 10.55 GeV
2.17±0.28±0.23		ALBRECHT	85F ARG	$e^+ e^-$ 10 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.0 ± 0.9	48	BAILEY	86 ACCM	π^- Be fixed target
2.0 ± 1.0	10	BAILEY	83B SPEC	π^- Be → D^0
2.2 ± 0.8	214	PICCOLO	77 MRK1	$e^+ e^-$ 4.03, 4.41 GeV

Γ_{67}/Γ_{31}

NODE=S032R29
NODE=S032R29

$\Gamma(K^- \pi^+ \rho^0_{\text{total}})/\Gamma(K^- 2\pi^+ \pi^-)$

Γ_{69}/Γ_{67}

NODE=S032B18
NODE=S032B18

This includes $K^- a_1(1260)^+$, $\bar{K}^*(892)^0 \rho^0$, etc. The next entry gives the specifically 3-body fraction. We rely on the MARK III and E691 full amplitude analyses of the $K^- \pi^+ \pi^+ \pi^-$ channel for values of the resonant substructure.

VALUE	DOCUMENT ID	TECN	COMMENT
0.835±0.035 OUR AVERAGE			
0.80 ± 0.03 ± 0.05	ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts
0.855±0.032±0.030	COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.98 ± 0.12 ± 0.10	ALVAREZ	91B NA14	Photoproduction

NODE=S032B18

$\Gamma(K^- \pi^+ \rho^0_{\text{3-body}})/\Gamma(K^- 2\pi^+ \pi^-)$

Γ_{69}/Γ_{67}

NODE=S032R32
NODE=S032R32

We rely on the MARK III and E691 full amplitude analyses of the $K^- \pi^+ \pi^+ \pi^-$ channel for values of the resonant substructure.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.063±0.028 OUR AVERAGE				
0.05 ± 0.03 ± 0.02	ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts	
0.084±0.022±0.04	COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts	
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.77 ± 0.06 ± 0.06	¹ ALVAREZ	91B NA14	Photoproduction	OCCUR=2
0.85 ± 0.11 ± 0.22	180	PICCOLO	77 MRK1	$e^+ e^-$ 4.03, 4.41 GeV

NODE=S032R32

¹ This value is for ρ^0 ($K^- \pi^+$)-nonresonant. ALVAREZ 91B cannot determine what fraction of this is $K^- a_1(1260)^+$.

NODE=S032R32;LINKAGE=A

$\Gamma(\bar{K}^*(892)^0 \rho^0)/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{101}/Γ_{67}

Unseen decay modes of the $\bar{K}^*(892)^0$ are included. We rely on the MARK III and E691 full amplitude analyses of the $K^- \pi^+ \pi^+ \pi^-$ channel for values of the resonant substructure.

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.195±0.03±0.03		ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.34 ± 0.09 ± 0.09		ALVAREZ	91B NA14	Photoproduction
0.75 ± 0.3	5	BAILEY	83B SPEC	$\pi^- \text{Be} \rightarrow D^0$
0.15 ^{+0.16} _{-0.15}	20	PICCOLO	77 MRK1	$e^+ e^-$ 4.03, 4.41 GeV

 $\Gamma(\bar{K}^*(892)^0 \rho^0 \text{transverse})/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{102}/Γ_{67}

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.213±0.024±0.075		COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0 \rho^0 S\text{-wave})/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{103}/Γ_{67}

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.375±0.045±0.06		ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0 \rho^0 S\text{-wave long.})/\Gamma_{\text{total}}$ Γ_{104}/Γ

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.003	90	COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0 \rho^0 P\text{-wave})/\Gamma_{\text{total}}$ Γ_{105}/Γ

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.003	90	COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0 \rho^0 D\text{-wave})/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{106}/Γ_{67}

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.255±0.045±0.06		ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(K^- \pi^+ f_0(980))/\Gamma_{\text{total}}$ Γ_{107}/Γ

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.011	90	ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0 f_0(980))/\Gamma_{\text{total}}$ Γ_{108}/Γ

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.007	90	ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(K^- a_1(1260)^+)/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{97}/Γ_{67}

Unseen decay modes of the $a_1(1260)^+$ are included, assuming that the $a_1(1260)^+$ decays entirely to $\rho \pi$ [or at least to $(\pi\pi)_{I=1} \pi$].

<u>VALUE</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.97 ± 0.14 OUR AVERAGE				
0.94 ± 0.13 ± 0.20		ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts
0.984 ± 0.048 ± 0.16		COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts

 $\Gamma(K^- a_2(1320)^+)/\Gamma_{\text{total}}$ Γ_{98}/Γ

Unseen decay modes of the $a_2(1320)^+$ are included.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.002	90	ANJOS	92C E691	1745 $K^- 2\pi^+ \pi^-$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.006	90	COFFMAN	92B MRK3	1281 ± 45 $K^- 2\pi^+ \pi^-$ evts

NODE=S032R36

NODE=S032R36

NODE=S032R36

NODE=S032B35

NODE=S032B35

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NODE=S032B62

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NODE=S032B60

NODE=S032B60

NODE=S032B60

NODE=S032B38

NODE=S032B38

NODE=S032B38

NODE=S032B39

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NODE=S032B39

$\Gamma(K_1(1270)^-\pi^+)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{109}/Γ_{67}

Unseen decay modes of the $K_1(1270)^-$ are included. The MARK3 and E691 experiments disagree considerably here.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
0.194±0.056±0.088		COFFMAN	92B MRK3	$1281 \pm 45 K^-2\pi^+\pi^-$ evts
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.013	90	ANJOS	92C E691	$1745 K^-2\pi^+\pi^-$ evts

 $\Gamma(K_1(1400)^-\pi^+)/\Gamma_{\text{total}}$ Γ_{110}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.012	90	COFFMAN	92B MRK3	$1281 \pm 45 K^-2\pi^+\pi^-$ evts

 $\Gamma(K^*(1410)^-\pi^+)/\Gamma_{\text{total}}$ Γ_{111}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.012	90	COFFMAN	92B MRK3	$1281 \pm 45 K^-2\pi^+\pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0\pi^+\pi^- \text{total})/\Gamma(K^-2\pi^+\pi^-)$ Γ_{99}/Γ_{67}

This includes $\bar{K}^*(892)^0\rho^0$, etc. The next entry gives the specifically 3-body fraction. Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

VALUE	DOCUMENT ID	TECN	COMMENT
0.30±0.06±0.03	ANJOS	92C E691	$1745 K^-2\pi^+\pi^-$ evts

 $\Gamma(\bar{K}^*(892)^0\pi^+\pi^- \text{3-body})/\Gamma(K^-2\pi^+\pi^-)$ Γ_{100}/Γ_{67}

Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

VALUE	DOCUMENT ID	TECN	COMMENT	
0.18 ± 0.04 OUR AVERAGE				
0.165±0.03 ± 0.045	ANJOS	92C E691	$1745 K^-2\pi^+\pi^-$ evts	
0.210±0.027±0.06	COFFMAN	92B MRK3	$1281 \pm 45 K^-2\pi^+\pi^-$ evts	

 $\Gamma(K^-2\pi^+\pi^- \text{nonresonant})/\Gamma(K^-2\pi^+\pi^-)$ Γ_{75}/Γ_{67}

VALUE	DOCUMENT ID	TECN	COMMENT	
0.233±0.032 OUR AVERAGE				
0.23 ± 0.02 ± 0.03	ANJOS	92C E691	$1745 K^-2\pi^+\pi^-$ evts	
0.242±0.025±0.06	COFFMAN	92B MRK3	$1281 \pm 45 K^-2\pi^+\pi^-$ evts	

 $\Gamma(K_S^0\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_{76}/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
5.2±0.6 OUR FIT				
5.2±1.1±1.2	140	COFFMAN	92B MRK3	$e^+e^- 3.77 \text{ GeV}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$6.7^{+1.6}_{-1.7}$		¹ BARLAG	92C ACCM	$\pi^- \text{ Cu } 230 \text{ GeV}$

¹ BARLAG 92C computes the branching fraction using topological normalization.

 $\Gamma(K_S^0\pi^+\pi^-\pi^0)/\Gamma(K_S^0\pi^+\pi^-)$ Γ_{76}/Γ_{35}

Branching fractions for submodes of this mode with narrow resonances (the η , ω , η') are fairly well determined (see below). COFFMAN 92B gives fractions of K^* and ρ submodes, but with only 140 ± 28 events above background could not determine them with much accuracy. We omit those measurements here; they are in our 2008 Review (Physics Letters **B667** 1 (2008)).

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.84±0.20 OUR FIT				
1.86±0.23 OUR AVERAGE				
1.80±0.20±0.21	190	¹ ALBRECHT	92P ARG	$e^+e^- \approx 10 \text{ GeV}$
2.8 ± 0.8 ± 0.8	46	ANJOS	92C E691	$\gamma\text{Be } 90\text{--}260 \text{ GeV}$
1.85±0.26±0.30	158	KINOSHITA	91 CLEO	$e^+e^- \sim 10.7 \text{ GeV}$

¹ This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K_S^0\eta)/\Gamma_{\text{total}}$ Γ_{94}/Γ

Unseen decay modes of the η are included.

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.42±0.15±0.28	ASNER	08 CLEO	See MENDEZ 10	

NODE=S032B40

NODE=S032B40

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NODE=S032B41

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NODE=S032B42

NODE=S032B64

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NODE=S032R33

NODE=S032B43

NODE=S032B43

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NODE=S032S23

NODE=S032S23;LINKAGE=A

NODE=S032B16

NODE=S032B16

NODE=S032B16

NODE=S032B16;LINKAGE=AP

NODE=S032C03

NODE=S032C03

NODE=S032C03

$\Gamma(K_S^0 \eta)/[\Gamma(K^- \pi^+) + \Gamma(K^+ \pi^-)]$ $\Gamma_{94}/(\Gamma_{31} + \Gamma_{222})$ Unseen decay modes of the η are included.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
12.3 ± 0.8 OUR FIT				
$12.3 \pm 0.3 \pm 0.7$	2864 ± 65	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

 $\Gamma(K_S^0 \eta)/\Gamma(K_S^0 \pi^0)$ Γ_{94}/Γ_{33} Unseen decay modes of the η are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.32 \pm 0.04 \pm 0.03$	225 ± 30	PROCARIO	93B	CLE2 $\eta \rightarrow \gamma\gamma$

 $\Gamma(K_S^0 \eta)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{94}/Γ_{35} Unseen decay modes of the η are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.14 \pm 0.02 \pm 0.02$	80 ± 12	PROCARIO	93B	CLE2 $\eta \rightarrow \pi^+ \pi^- \pi^0$

 $\Gamma(K_S^0 \omega)/\Gamma_{\text{total}}$ Γ_{95}/Γ Unseen decay modes of the ω are included.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
1.11 ± 0.06 OUR FIT			
$1.12 \pm 0.04 \pm 0.05$	ASNER	08	CLEO $e^+ e^- \rightarrow D^0 \bar{D}^0$, 3.77 GeV

 $\Gamma(K_S^0 \omega)/\Gamma(K^- \pi^+)$ Γ_{95}/Γ_{31} Unseen decay modes of the ω are included.

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$0.50 \pm 0.18 \pm 0.10$	ALBRECHT	89D	ARG $e^+ e^-$ 10 GeV

 $\Gamma(K_S^0 \omega)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{95}/Γ_{35} Unseen decay modes of the ω are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.393 ± 0.033 OUR FIT				Error includes scale factor of 1.1. [0.394 ± 0.033 OUR 2012 FIT Scale factor = 1.1]
0.33 ± 0.09 OUR AVERAGE				Error includes scale factor of 1.1.
$0.29 \pm 0.08 \pm 0.05$	16	¹ ALBRECHT	92P	ARG $e^+ e^- \approx 10$ GeV
$0.54 \pm 0.14 \pm 0.16$	40	KINOSHITA	91	CLEO $e^+ e^- \sim 10.7$ GeV

1 This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K_S^0 \omega)/\Gamma(K_S^0 \pi^+ \pi^- \pi^0)$ Γ_{95}/Γ_{76} Unseen decay modes of the ω are included.

VALUE	DOCUMENT ID	TECN	COMMENT
0.213 ± 0.026 OUR FIT			[0.214 ± 0.026 OUR 2012 FIT]
$0.220 \pm 0.048 \pm 0.016$	COFFMAN	92B	MRK3 $1281 \pm 45 K^- 2\pi^+ \pi^-$ evts

 $\Gamma(K_S^0 \eta'(958))/[\Gamma(K^- \pi^+) + \Gamma(K^+ \pi^-)]$ $\Gamma_{96}/(\Gamma_{31} + \Gamma_{222})$ Unseen decay modes of the $\eta'(958)$ are included.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
24.1 ± 1.3 OUR FIT				
$24.3 \pm 0.8 \pm 1.1$	1321 ± 42	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

 $\Gamma(K_S^0 \eta'(958))/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{96}/Γ_{35} Unseen decay modes of the $\eta'(958)$ are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.331 ± 0.025 OUR FIT				[0.332 ± 0.025 OUR 2012 FIT]
0.32 ± 0.04 OUR AVERAGE				

$0.31 \pm 0.02 \pm 0.04$	594	PROCARIO	93B	CLE2 $\eta' \rightarrow \eta \pi^+ \pi^-$, $\rho^0 \gamma$
$0.37 \pm 0.13 \pm 0.06$	18	¹ ALBRECHT	92P	ARG $e^+ e^- \approx 10$ GeV

1 This value is calculated from numbers in Table 1 of ALBRECHT 92P.

NODE=S032S79

NODE=S032S79

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NODE=S032B65

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NODE=S032B01

NODE=S032B67

NODE=S032B67

NODE=S032B67

NEW

NODE=S032B67;LINKAGE=AP

$\Gamma(K^-\pi^+2\pi^0)/\Gamma_{\text{total}}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{79}/Γ
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.177 \pm 0.029		¹ BARLAG	92C	ACCM π^- Cu 230 GeV	NODE=S032R25
0.149 \pm 0.037 \pm 0.030	24	² ADLER	88C	MRK3 $e^+ e^-$ 3.77 GeV	NODE=S032R25
0.209 $^{+0.074}_{-0.043}$ \pm 0.012	9	¹ AGUILAR...	87F	HYBR $\pi p, pp$ 360, 400 GeV	

¹ AGUILAR-BENITEZ 87F and BARLAG 92C compute the branching fraction using topological normalization. They do not distinguish the presence of a third π^0 , and thus are not included in the average.

² ADLER 88C uses an absolute normalization method finding this decay channel opposite a detected $D^0 \rightarrow K^+ \pi^-$ in pure $D\bar{D}$ events.

 $\Gamma(K^-\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{80}/Γ_{31}
1.09 \pm 0.10 OUR FIT					
0.98 \pm 0.11 \pm 0.11	225	¹ ALBRECHT	92P	ARG $e^+ e^-$ \approx 10 GeV	

¹ This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K^-\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^-)$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{80}/Γ_{67}
0.52 \pm 0.05 OUR FIT					
0.56 \pm 0.07 OUR AVERAGE					

0.55 \pm 0.07 $^{+0.12}_{-0.09}$	167	KINOSHITA	91	CLEO $e^+ e^-$ \sim 10.7 GeV
0.57 \pm 0.06 \pm 0.05	180	ANJOS	90D	E691 Photoproduction

 $\Gamma(\bar{K}^*(892)^0\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^-\pi^0)$ Γ_{112}/Γ_{80}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{112}/Γ_{80}
0.45 \pm 0.15 \pm 0.15					
		ANJOS	90D	E691 Photoproduction	

 $\Gamma(\bar{K}^*(892)^0\eta)/\Gamma(K^-\pi^+)$ Γ_{113}/Γ_{31}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{113}/Γ_{31}
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.58 \pm 0.19 $^{+0.24}_{-0.28}$	46	KINOSHITA	91	CLEO $e^+ e^-$ \sim 10.7 GeV	

 $\Gamma(\bar{K}^*(892)^0\eta)/\Gamma(K^-\pi^+\pi^0)$ Γ_{113}/Γ_{50}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{113}/Γ_{50}
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.13 \pm 0.02 \pm 0.03	214	PROCARIO	93B	CLE2 $\bar{K}^{*0}\eta \rightarrow K^-\pi^+/\gamma\gamma$	

 $\Gamma(K_S^0\eta\pi^0)/\Gamma(K_S^0\pi^0)$ Γ_{84}/Γ_{33}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{84}/Γ_{33}
0.46 \pm 0.07 \pm 0.06					
	155 \pm 22	¹ RUBIN	04	CLEO $e^+ e^-$ \approx 10 GeV	

¹ The η here is detected in its $\gamma\gamma$ mode, but other η modes are included in the value given.

 $\Gamma(K_S^0a_0(980), a_0(980) \rightarrow \eta\pi^0)/\Gamma(K_S^0\eta\pi^0)$ Γ_{85}/Γ_{84}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{85}/Γ_{84}
1.19 \pm 0.09 \pm 0.26					
		¹ RUBIN	04	CLEO Dalitz fit, 155 evts	

¹ In addition to $K_S^0 a_0(980)$ and $\bar{K}^*(892)^0\eta$ modes, RUBIN 04 finds a fit fraction of $0.246 \pm 0.092 \pm 0.091$ for other, undetermined modes.

 $\Gamma(\bar{K}^*(892)^0\eta, \bar{K}^*(892)^0\eta\pi^0\pi^0)$ Γ_{86}/Γ_{84}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	Γ_{86}/Γ_{84}
0.293 \pm 0.062 \pm 0.035					
		¹ RUBIN	04	CLEO Dalitz fit, 155 evts	

¹ See the note on RUBIN 04 in the preceding data block.

NODE=S032R25

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NODE=S032S04

NODE=S032S04;LINKAGE=RU

NODE=S032S05
NODE=S032S05
NODE=S032S05

NODE=S032S05;LINKAGE=RU

$\Gamma(K^-\pi^+\omega)/\Gamma(K^-\pi^+)$ Γ_{114}/Γ_{31} Unseen decay modes of the ω are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.78±0.12±0.10	99	1 ALBRECHT	92P ARG	$e^+e^- \approx 10$ GeV

1 This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(\bar{K}^*(892)^0\omega)/\Gamma(K^-\pi^+)$ Γ_{115}/Γ_{31} Unseen decay modes of the $\bar{K}^*(892)^0$ and ω are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.28±0.11±0.04	17	1 ALBRECHT	92P ARG	$e^+e^- \approx 10$ GeV

1 This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K^-\pi^+\eta'(958))/\Gamma(K^-\pi^+\pi^-)$ Γ_{116}/Γ_{67} Unseen decay modes of the $\eta'(958)$ are included.

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.093±0.014±0.019	286	PROCARIO	93B CLE2	$\eta' \rightarrow \eta\pi^+\pi^-, \rho^0$

 $\Gamma(\bar{K}^*(892)^0\eta'(958))/\Gamma(K^-\pi^+\eta'(958))$ $\Gamma_{117}/\Gamma_{116}$ Unseen decay modes of the $\bar{K}^*(892)^0$ are included.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.15	90	PROCARIO	93B CLE2	

 $\Gamma(K_S^0 2\pi^+ 2\pi^-)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{87}/Γ_{35}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.095±0.005±0.007	1283 ± 57	LINK	04D FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.07 ± 0.02 ± 0.01	11	1 ALBRECHT	92P ARG	$e^+e^- \approx 10$ GeV
0.149 ± 0.026	56	AMMAR	91 CLEO	$e^+e^- \approx 10.5$ GeV
0.18 ± 0.07 ± 0.04	6	ANJOS	90D E691	Photoproduction

1 This value is calculated from numbers in Table 1 of ALBRECHT 92P.

 $\Gamma(K_S^0 \rho^0 \pi^+ \pi^-, \text{no } K^*(892)^-)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ Γ_{88}/Γ_{87}

VALUE	DOCUMENT ID	TECN	COMMENT
0.40±0.24±0.07	LINK	04D FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

 $\Gamma(K^*(892)^- 2\pi^+ \pi^-, K^*(892)^- \rightarrow K_S^0 \pi^-, \text{no } \rho^0)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ Γ_{89}/Γ_{87}

VALUE	DOCUMENT ID	TECN	COMMENT
0.17±0.28±0.02	LINK	04D FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

 $\Gamma(K^*(892)^- \rho^0 \pi^+, K^*(892)^- \rightarrow K_S^0 \pi^+)/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ Γ_{90}/Γ_{87}

VALUE	DOCUMENT ID	TECN	COMMENT
0.60±0.21±0.09	LINK	04D FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

 $\Gamma(K_S^0 2\pi^+ 2\pi^- \text{ nonresonant})/\Gamma(K_S^0 2\pi^+ 2\pi^-)$ Γ_{91}/Γ_{87}

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.46	90	LINK	04D FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

 $\Gamma(K^- 3\pi^+ 2\pi^-)/\Gamma(K^- 2\pi^+ \pi^-)$ Γ_{93}/Γ_{67}

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
2.70±0.58±0.38	48 ± 10	LINK	04B FOCS	$\gamma A, \bar{E}_\gamma \approx 180$ GeV

Hadronic modes with three K 's

 $\Gamma(K_S^0 K^+ K^-)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{118}/Γ_{35}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.158±0.001±0.005	14k ± 116	AUBERT,B	05J BABR	$e^+e^- \approx \Upsilon(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.20 ± 0.05 ± 0.04	47	FRABETTI	92B E687	$\gamma Be, \bar{E}_\gamma = 221$ GeV
0.170 ± 0.022	136	AMMAR	91 CLEO	$e^+e^- \approx 10.5$ GeV
0.24 ± 0.08		BEBEK	86 CLEO	e^+e^- near $\Upsilon(4S)$
0.185 ± 0.055	52	ALBRECHT	85B ARG	$e^+e^- 10$ GeV

 $\Gamma(K_S^0 a_0(980)^0, a_0^0 \rightarrow K^+ K^-)/\Gamma(K_S^0 K^+ K^-)$ $\Gamma_{119}/\Gamma_{118}$

This is the “fit fraction” from the Dalitz-plot analysis, with interference.

VALUE	DOCUMENT ID	TECN	COMMENT
0.664±0.016±0.070	AUBERT,B	05J BABR	Dalitz fit, 12540 ± 112 evts

NODE=S032B87

NODE=S032B87

NODE=S032B87

NODE=S032B86;LINKAGE=AP

NODE=S032B86

NODE=S032B86

NODE=S032B86

NODE=S032B73

NODE=S032B73

NODE=S032B73

NODE=S032R94

NODE=S032R94

NODE=S032S89

NODE=S032S89

NODE=S032S90

NODE=S032S90

NODE=S032S91

NODE=S032S91

NODE=S032S92

NODE=S032S92

NODE=S032S1

NODE=S032S1

NODE=S032C40

NODE=S032C40

NODE=S032C40

$$\Gamma(K^- a_0(980)^+ , a_0^+ \rightarrow K^+ K_S^0) / \Gamma(K_S^0 K^+ K^-)$$

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.134±0.011±0.037	AUBERT,B	05J	BABR Dalitz fit, 12540 ± 112 evts

$$\Gamma_{120}/\Gamma_{118}$$

$$\Gamma(K^+ a_0(980)^- , a_0^- \rightarrow K^- K_S^0) / \Gamma(K_S^0 K^+ K^-)$$

This is a doubly Cabibbo-suppressed mode.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.025	95	AUBERT,B	05J	BABR Dalitz fit, 12540 ± 112 evts

NODE=S032C41

NODE=S032C41

NODE=S032C41

$$\Gamma(K_S^0 f_0(980), f_0 \rightarrow K^+ K^-) / \Gamma(K_S^0 K^+ K^-)$$

$$\Gamma_{122}/\Gamma_{118}$$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.021	95	AUBERT,B	05J	BABR Dalitz fit, 12540 ± 112 evts

NODE=S032C43

NODE=S032C43

$$\Gamma(K_S^0 \phi, \phi \rightarrow K^+ K^-) / \Gamma(K_S^0 K^+ K^-)$$

$$\Gamma_{123}/\Gamma_{118}$$

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.459±0.007±0.007	AUBERT,B	05J	BABR Dalitz fit, 12540 ± 112 evts

NODE=S032C44

NODE=S032C44

NODE=S032C44

$$\Gamma(K_S^0 f_0(1370), f_0 \rightarrow K^+ K^-) / \Gamma(K_S^0 K^+ K^-)$$

$$\Gamma_{124}/\Gamma_{118}$$

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.038±0.007±0.023	1 AUBERT,B	05J	BABR Dalitz fit, 12540 ± 112 evts

1 AUBERT,B 05J calls the mode $K_S^0 f_0(1400)$, but insofar as it is seen here at all, it is certainly the same as $f_0(1370)$.

NODE=S032C45

NODE=S032C45

NODE=S032C45

$$\Gamma(3K_S^0) / \Gamma(K_S^0 \pi^+ \pi^-)$$

$$\Gamma_{125}/\Gamma_{35}$$

<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
3.2 ± 0.4 OUR AVERAGE				
3.58±0.54±0.52	170 ± 26	LINK	05A FOCS	γ Be, $\bar{E}_\gamma \approx 180$ GeV
2.78±0.38±0.48	61	ASNER	96B CLE2	$e^+ e^- \approx \Upsilon(4S)$
7.0 ± 2.4 ± 1.2	10 ± 3	FRABETTI	94J E687	γ Be, $\bar{E}_\gamma = 220$ GeV
3.2 ± 1.0	22	AMMAR	91 CLEO	$e^+ e^- \approx 10.5$ GeV
3.4 ± 1.4 ± 1.0	5	ALBRECHT	90C ARG	$e^+ e^- \approx 10$ GeV

NODE=S032B26

NODE=S032B26

$$\Gamma(K^+ 2K^- \pi^+) / \Gamma(K^- 2\pi^+ \pi^-)$$

$$\Gamma_{126}/\Gamma_{67}$$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.027 ± 0.004 OUR AVERAGE				
Error includes scale factor of 1.1.				
0.00257±0.00034±0.00024	143	LINK	03G FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV
0.0054 ± 0.0016 ± 0.0008	18	AITALA	01D E791	π^- A, 500 GeV
0.0028 ± 0.0007 ± 0.0001	20	FRABETTI	95C E687	γ Be, $\bar{E}_\gamma \approx 200$ GeV

NODE=S032B98

NODE=S032B98

$$\Gamma(\phi \bar{K}^*(892)^0, \phi \rightarrow K^+ K^-, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^+ 2K^- \pi^+)$$

$$\Gamma_{129}/\Gamma_{126}$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.48±0.06±0.01	LINK	03G FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

NODE=S032S85

NODE=S032S85

$$\Gamma(K^- \pi^+ \phi, \phi \rightarrow K^+ K^-) / \Gamma(K^+ 2K^- \pi^+)$$

$$\Gamma_{128}/\Gamma_{126}$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.18±0.06±0.04	LINK	03G FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

NODE=S032C23

NODE=S032C23

$$\Gamma(K^+ K^- \bar{K}^*(892)^0, \bar{K}^*(892)^0 \rightarrow K^- \pi^+) / \Gamma(K^+ 2K^- \pi^+)$$

$$\Gamma_{127}/\Gamma_{126}$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.20±0.07±0.02	LINK	03G FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

NODE=S032S86

NODE=S032S86

$$\Gamma(K^+ 2K^- \pi^+ \text{nonresonant}) / \Gamma(K^+ 2K^- \pi^+)$$

$$\Gamma_{130}/\Gamma_{126}$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.15±0.06±0.02	LINK	03G FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

NODE=S032S87

NODE=S032S87

$$\Gamma(2K_S^0 K^\pm \pi^\mp) / \Gamma(K_S^0 \pi^+ \pi^-)$$

$$\Gamma_{131}/\Gamma_{35}$$

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2.12±0.38±0.20	57 ± 10	LINK	05A FOCS	γ Be, $\bar{E}_\gamma \approx 180$ GeV

NODE=S032S97

NODE=S032S97

$\Gamma(\pi^+\pi^-)/\Gamma(K^-\pi^+)$ VALUE (units 10^{-2}) EVTS**3.62 ± 0.05 OUR FIT****3.59 ± 0.06 OUR AVERAGE**

		DOCUMENT ID	TECN	COMMENT
3.594 ± 0.054 ± 0.040	7334 ± 97	ACOSTA	05C CDF	$p\bar{p}, \sqrt{s} = 1.96 \text{ TeV}$
3.53 ± 0.12 ± 0.06	3453	LINK	03 FOCS	$\gamma A, \bar{E}_\gamma \approx 180 \text{ GeV}$
3.51 ± 0.16 ± 0.17	710	CSORNA	02 CLE2	$e^+ e^- \approx \Upsilon(4S)$
4.0 ± 0.2 ± 0.3	2043	AITALA	98C E791	$\pi^- A, 500 \text{ GeV}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.62 ± 0.10 ± 0.08	2085 ± 54	RUBIN	06 CLEO	See MENDEZ 10
3.4 ± 0.7 ± 0.1	76 ± 15	ABLIKIM	05F BES	$e^+ e^- \approx \psi(3770)$
4.3 ± 0.7 ± 0.3	177	FRABETTI	94C E687	$\gamma Be \bar{E}_\gamma = 220 \text{ GeV}$
3.48 ± 0.30 ± 0.23	227	SELEN	93 CLE2	$e^+ e^- \approx \Upsilon(4S)$
5.5 ± 0.8 ± 0.5	120	ANJOS	91D E691	Photoproduction
5.0 ± 0.7 ± 0.5	110	ALEXANDER	90 CLEO	$e^+ e^- 10.5\text{--}11 \text{ GeV}$

 Γ_{132}/Γ_{31}

NODE=S032R26

NODE=S032R26

 $\Gamma(\pi^+\pi^-)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ VALUE (units 10^{-2}) EVTS**3.60 ± 0.05 OUR FIT****3.70 ± 0.06 ± 0.09**

6210 ± 93

DOCUMENT ID

TECN

 $\Gamma_{132}/(\Gamma_{31} + \Gamma_{222})$

NODE=S032B02

NODE=S032B02

 $\Gamma(2\pi^0)/\Gamma_{\text{total}}$ VALUE (units 10^{-4}) EVTS**8.20 ± 0.35 OUR FIT****8.4 ± 0.1 ± 0.5**

EVTS

DOCUMENT ID

TECN

 Γ_{133}/Γ

NODE=S032Q15

NODE=S032Q15

 $\Gamma(2\pi^0)/\Gamma(K^-\pi^+)$ VALUE (units 10^{-2}) EVTS

• • • We do not use the following data for averages, fits, limits, etc. • • •

		DOCUMENT ID	TECN	COMMENT
2.05 ± 0.13 ± 0.16	499 ± 32	RUBIN	06 CLEO	See MENDEZ 10
2.2 ± 0.4 ± 0.4	40	SELEN	93 CLE2	$e^+ e^- \rightarrow \Upsilon(4S)$

 Γ_{133}/Γ_{31}

NODE=S032B83

NODE=S032B83

 $\Gamma(2\pi^0)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ VALUE (units 10^{-2}) EVTS**2.11 ± 0.09 OUR FIT**[(2.06 ± 0.12) × 10⁻² OUR 2012 FIT]**2.06 ± 0.07 ± 0.10**

1567 ± 54

DOCUMENT ID

TECN

 $\Gamma_{133}/(\Gamma_{31} + \Gamma_{222})$

NODE=S032B03

NODE=S032B03

NEW

 $\Gamma(\pi^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ VALUE (units 10^{-2}) EVTS

10.34 ± 0.24 OUR FIT Error includes scale factor of 2.2.

10.41 ± 0.23 OUR AVERAGE Error includes scale factor of 2.0.

		DOCUMENT ID	TECN	COMMENT
10.12 ± 0.04 ± 0.18	123k ± 490	ARINSTEIN	08 BELL	$e^+ e^- \approx \Upsilon(4S)$
10.59 ± 0.06 ± 0.13	60k ± 343	AUBERT,B	06X BABR	$e^+ e^- \approx \Upsilon(4S)$

 Γ_{134}/Γ_{31}

NODE=S032C29

NODE=S032C29

NEW

 $\Gamma(\rho^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ VALUE (units 10^{-2}) EVTS

10.34 ± 0.24 OUR FIT Error includes scale factor of 2.2.

10.41 ± 0.23 OUR AVERAGE Error includes scale factor of 2.0.

		DOCUMENT ID	TECN	COMMENT
10.12 ± 0.04 ± 0.18	123k ± 490	ARINSTEIN	08 BELL	$e^+ e^- \approx \Upsilon(4S)$
10.59 ± 0.06 ± 0.13	60k ± 343	AUBERT,B	06X BABR	$e^+ e^- \approx \Upsilon(4S)$

 Γ_{134}/Γ_{50}

NODE=S032C52

NODE=S032C52

NEW

 $\Gamma(\rho^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ VALUE (units 10^{-2}) EVTS

68.1 ± 0.6 OUR AVERAGE

		DOCUMENT ID	TECN	COMMENT
67.8 ± 0.0 ± 0.6		AUBERT	07BJ BABR	Dalitz fit, 45k events
76.3 ± 1.9 ± 2.5		CRONIN-HEN..05	CLEO	$e^+ e^- \approx 10 \text{ GeV}$

NODE=S032C46

NODE=S032C46

NODE=S032C46

$\Gamma(\rho^0\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{136}/\Gamma_{134}$

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
25.9±1.1 OUR AVERAGE			
26.2±0.5±1.1	AUBERT	07BJ BABR	Dalitz fit, 45k events
24.4±2.0±2.1	CRONIN-HEN..05	CLEO	$e^+e^- \approx 10$ GeV

 $\Gamma(\rho^-\pi^+)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{137}/\Gamma_{134}$

This is the "fit fraction" from the Dalitz-plot analysis, with interference.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
34.6±0.8 OUR AVERAGE			
34.6±0.8±0.3	AUBERT	07BJ BABR	Dalitz fit, 45k events
34.5±2.4±1.3	CRONIN-HEN..05	CLEO	$e^+e^- \approx 10$ GeV

 $\Gamma(\rho(1450)^+\pi^-, \rho(1450)^+\rightarrow\pi^+\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{138}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.11±0.07±0.12			

 $\Gamma(\rho(1450)^0\pi^0, \rho(1450)^0\rightarrow\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{139}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.30±0.11±0.07			

 $\Gamma(\rho(1450)^-\pi^+, \rho(1450)^-\rightarrow\pi^-\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{140}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
1.79±0.22±0.12			

 $\Gamma(\rho(1700)^+\pi^-, \rho(1700)^+\rightarrow\pi^+\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{141}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4.1±0.7±0.7			

 $\Gamma(\rho(1700)^0\pi^0, \rho(1700)^0\rightarrow\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{142}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
5.0±0.6±1.0			

 $\Gamma(\rho(1700)^-\pi^+, \rho(1700)^-\rightarrow\pi^-\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{143}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
3.2±0.4±0.6			

 $\Gamma(f_0(980)\pi^0, f_0(980)\rightarrow\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{144}/\Gamma_{134}$

<u>VALUE</u> (units 10^{-2})	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.25 ±0.04±0.04	AUBERT	07BJ BABR	Dalitz fit, 45k events	

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.026 95 ¹ CRONIN-HEN..05 CLEO $e^+e^- \approx 10$ GeV

1 The CRONIN-HENNESSY 05 fit here includes, in addition to the three $\rho\pi$ charged states, only the $f_0(980)\pi^0$ mode. See also the next entries for limits obtained in the same way for the $f_0(500)\pi^0$ mode and for an S-wave $\pi^+\pi^-$ parametrized using a K-matrix. Our $\rho\pi$ branching ratios, given above, use the fit with the K-matrix S wave.

 $\Gamma(f_0(500)\pi^0, f_0(500)\rightarrow\pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{145}/\Gamma_{134}$

The $f_0(500)$ is the σ .

<u>VALUE</u> (units 10^{-2})	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.82±0.10±0.10	AUBERT	07BJ BABR	Dalitz fit, 45k events	

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.21 95 ¹ CRONIN-HEN..05 CLEO $e^+e^- \approx 10$ GeV

1 See the note on CRONIN-HENNESSY 05 in the proceeding data block.

 $\Gamma((\pi^+\pi^-)S\text{-wave}\pi^0)/\Gamma(\pi^+\pi^-\pi^0)$ $\Gamma_{146}/\Gamma_{134}$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.019	95	¹ CRONIN-HEN..05	CLEO	$e^+e^- \approx 10$ GeV

1 See the note on CRONIN-HENNESSY 05 two data blocks up.

NODE=S032C47

NODE=S032C47

NODE=S032C47

NODE=S032C48

NODE=S032C48

NODE=S032C48

NODE=S032S02

NODE=S032S02

NODE=S032S10

NODE=S032S10

NODE=S032S10

NODE=S032S10

NODE=S032S29

NODE=S032S29

NODE=S032S30

NODE=S032S30

NODE=S032S32

NODE=S032S32

NODE=S032S66

NODE=S032S66

NODE=S032C50

NODE=S032C50

NODE=S032C50;LINKAGE=CR

NODE=S032C49

NODE=S032C49

NODE=S032C49

NODE=S032C49;LINKAGE=CR

NODE=S032C51

NODE=S032C51

NODE=S032C51;LINKAGE=CR

$\Gamma(f_0(1370)\pi^0, f_0(1370) \rightarrow \pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$	$\Gamma_{147}/\Gamma_{134}$	NODE=S032S67 NODE=S032S67		
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>		
0.37±0.11±0.09	AUBERT	07BJ BABR Dalitz fit, 45k events		
$\Gamma(f_0(1500)\pi^0, f_0(1500) \rightarrow \pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$	$\Gamma_{148}/\Gamma_{134}$	NODE=S032S68 NODE=S032S68		
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>		
0.39±0.08±0.07	AUBERT	07BJ BABR Dalitz fit, 45k events		
$\Gamma(f_0(1710)\pi^0, f_0(1710) \rightarrow \pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$	$\Gamma_{149}/\Gamma_{134}$	NODE=S032S69 NODE=S032S69		
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>		
0.31±0.07±0.08	AUBERT	07BJ BABR Dalitz fit, 45k events		
$\Gamma(f_2(1270)\pi^0, f_2(1270) \rightarrow \pi^+\pi^-)/\Gamma(\pi^+\pi^-\pi^0)$	$\Gamma_{150}/\Gamma_{134}$	NODE=S032S70 NODE=S032S70		
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>		
1.32±0.08±0.10	AUBERT	07BJ BABR Dalitz fit, 45k events		
$\Gamma(\pi^+\pi^-\pi^0 \text{ nonresonant})/\Gamma(\pi^+\pi^-\pi^0)$	$\Gamma_{151}/\Gamma_{134}$	NODE=S032S75 NODE=S032S75		
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>		
0.84±0.21±0.12	AUBERT	07BJ BABR Dalitz fit, 45k events		
$\Gamma(3\pi^0)/\Gamma_{\text{total}}$	Γ_{152}/Γ	NODE=S032C32 NODE=S032C32		
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<3.5 × 10⁻⁴	90	RUBIN	06 CLEO	e^+e^- at $\psi(3770)$
$\Gamma(2\pi^+2\pi^-)/\Gamma(K^-\pi^+)$	Γ_{153}/Γ_{31}	NODE=S032C30 NODE=S032C30		
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
19.1±0.5 OUR FIT	Error includes scale factor of 1.1.			
19.1±0.4±0.6	7331 ± 130	RUBIN	06 CLEO	e^+e^- at $\psi(3770)$
$\Gamma(2\pi^+2\pi^-)/\Gamma(K^-2\pi^+\pi^-)$	Γ_{153}/Γ_{67}	NODE=S032R37 NODE=S032R37		
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
9.19±0.23 OUR FIT	Error includes scale factor of 1.1.			
9.20±0.26 OUR AVERAGE				
9.14 ± 0.18 ± 0.22	6360 ± 115	LINK	07A FOCS	$\gamma\text{Be}, \bar{E}_\gamma \approx 180 \text{ GeV}$
7.9 ± 1.8 ± 0.5	162	ABLIKIM	05F BES	$e^+e^- \approx \psi(3770)$
9.5 ± 0.7 ± 0.2	814	FRABETTI	95C E687	$\gamma\text{Be}, \bar{E}_\gamma \approx 200 \text{ GeV}$
10.2 ± 1.3	345	AMMAR	91 CLEO	$e^+e^- \approx 10.5 \text{ GeV}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
11.5 ± 2.3 ± 1.6	64	ADAMOVICH	92 OMEG	$\pi^- 340 \text{ GeV}$
10.8 ± 2.4 ± 0.8	79	FRABETTI	92 E687	γBe
9.6 ± 1.8 ± 0.7	66	ANJOS	91 E691	$\gamma\text{Be} 80\text{--}240 \text{ GeV}$
$\Gamma(a_1(1260)^+\pi^-, a_1^+ \rightarrow 2\pi^+\pi^- \text{ total})/\Gamma(2\pi^+2\pi^-)$	$\Gamma_{154}/\Gamma_{153}$	NODE=S032C53 NODE=S032C53 NODE=S032C53		
This is the fit fraction from the coherent amplitude analysis.				
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
60.0±3.0±2.4	LINK	07A FOCS	4-body fit, ≈ 5.7k evts	
$\Gamma(a_1(1260)^+\pi^-, a_1^+ \rightarrow \rho^0\pi^+ \text{ S-wave})/\Gamma(2\pi^+2\pi^-)$	$\Gamma_{155}/\Gamma_{153}$	NODE=S032C54 NODE=S032C54 NODE=S032C54		
This is the fit fraction from the coherent amplitude analysis.				
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
43.3±2.5±1.9	LINK	07A FOCS	4-body fit, ≈ 5.7k evts	
$\Gamma(a_1(1260)^+\pi^-, a_1^+ \rightarrow \rho^0\pi^+ \text{ D-wave})/\Gamma(2\pi^+2\pi^-)$	$\Gamma_{156}/\Gamma_{153}$	NODE=S032C55 NODE=S032C55 NODE=S032C55		
This is the fit fraction from the coherent amplitude analysis.				
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
2.5±0.5±0.4	LINK	07A FOCS	4-body fit, ≈ 5.7k evts	
$\Gamma(a_1(1260)^+\pi^-, a_1^+ \rightarrow \sigma\pi^+)/\Gamma(2\pi^+2\pi^-)$	$\Gamma_{157}/\Gamma_{153}$	NODE=S032C56 NODE=S032C56 NODE=S032C56		
This is the fit fraction from the coherent amplitude analysis.				
<u>VALUE (units 10^{-2})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
8.3±0.7±0.6	LINK	07A FOCS	4-body fit, ≈ 5.7k evts	

$\Gamma(2\rho^0 \text{total})/\Gamma(2\pi^+ 2\pi^-)$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
24.5±1.3±1.0	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

 $\Gamma_{158}/\Gamma_{153}$

NODE=S032C57

NODE=S032C57

NODE=S032C57

 $\Gamma(2\rho^0, \text{parallel helicities})/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{159}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
1.1±0.3±0.3	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C58

NODE=S032C58

NODE=S032C58

 $\Gamma(2\rho^0, \text{perpendicular helicities})/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{160}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
6.4±0.6±0.5	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C59

NODE=S032C59

NODE=S032C59

 $\Gamma(2\rho^0, \text{longitudinal helicities})/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{161}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
16.8±1.0±0.8	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C60

NODE=S032C60

NODE=S032C60

 $\Gamma(\text{Resonant } (\pi^+ \pi^-) \pi^+ \pi^- \text{ 3-body total})/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{162}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
20.0±1.2±1.0	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C61

NODE=S032C61

NODE=S032C61

 $\Gamma(\sigma \pi^+ \pi^-)/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{163}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
8.2±0.9±0.7	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C62

NODE=S032C62

NODE=S032C62

 $\Gamma(f_0(980)\pi^+ \pi^-, f_0 \rightarrow \pi^+ \pi^-)/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{164}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2.4±0.5±0.4	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C63

NODE=S032C63

NODE=S032C63

 $\Gamma(f_2(1270)\pi^+ \pi^-, f_2 \rightarrow \pi^+ \pi^-)/\Gamma(2\pi^+ 2\pi^-)$ $\Gamma_{165}/\Gamma_{153}$

This is the fit fraction from the coherent amplitude analysis.

<u>VALUE</u> (units 10^{-2})	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4.9±0.6±0.5	LINK	07A	FOCS 4-body fit, $\approx 5.7k$ evts

NODE=S032C64

NODE=S032C64

NODE=S032C64

 $\Gamma(\pi^+ \pi^- 2\pi^0)/\Gamma(K^- \pi^+)$ Γ_{166}/Γ_{31}

<u>VALUE</u> (units 10^{-2})	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
25.8±1.5±1.8	2724 ± 166	RUBIN	06	CLEO $e^+ e^-$ at $\psi(3770)$

NODE=S032C33

NODE=S032C33

NODE=S032C33

 $\Gamma(\eta \pi^0)/\Gamma_{\text{total}}$ Γ_{167}/Γ Unseen decay modes of the η are included.

<u>VALUE</u> (units 10^{-4})	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				

NODE=S032C65

NODE=S032C65

NODE=S032C65

6.4±1.0±0.4 156 ± 24 ARTUSO 08 CLEO See MENDEZ 10

 $\Gamma(\eta \pi^0)/\Gamma(K^- \pi^+)$ Γ_{167}/Γ_{31} Unseen decay modes of the η are included.

<u>VALUE</u> (units 10^{-2})	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				

NODE=S032C34

NODE=S032C34

NODE=S032C34

1.47±0.34±0.11 62 ± 14 RUBIN 06 CLEO See ARTUSO 08

 $\Gamma(\eta \pi^0)/[\Gamma(K^- \pi^+) + \Gamma(K^+ \pi^-)]$ $\Gamma_{167}/(\Gamma_{31} + \Gamma_{222})$ Unseen decay modes of the η are included.

<u>VALUE</u> (units 10^{-2})	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
1.74±0.19 OUR FIT	481 ± 40	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

NODE=S032B04

NODE=S032B04

NODE=S032B04

$\Gamma(\omega\pi^0)/\Gamma_{\text{total}}$ Unseen decay modes of the ω are included.

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<2.6 ± 10⁻⁴	90	RUBIN	06	CLEO $e^+ e^-$ at $\psi(3770)$

 Γ_{168}/Γ

NODE=S032C35
NODE=S032C35
NODE=S032C35

 $\Gamma(2\pi^+ 2\pi^- \pi^0)/\Gamma(K^- \pi^+)$

<u>VALUE (units 10⁻²)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10.7 ± 1.2 ± 0.5	1614 ± 171	RUBIN	06	CLEO $e^+ e^-$ at $\psi(3770)$

 Γ_{169}/Γ_{31}

NODE=S032C31
NODE=S032C31

 $\Gamma(\eta\pi^+\pi^-)/\Gamma_{\text{total}}$ Unseen decay modes of the η are included.

<u>VALUE (units 10⁻⁴)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10.9 ± 1.3 ± 0.9	257 ± 32	ARTUSO	08	CLEO	$e^+ e^-$ at $\psi(3770)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<19	90	RUBIN	06	CLEO	$e^+ e^-$ at $\psi(3770)$

 Γ_{170}/Γ

NODE=S032C36
NODE=S032C36
NODE=S032C36

 $\Gamma(\omega\pi^+\pi^-)/\Gamma(K^-\pi^+)$ Unseen decay modes of the ω are included.

<u>VALUE (units 10⁻²)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4.1 ± 1.2 ± 0.4	472 ± 132	RUBIN	06	CLEO $e^+ e^-$ at $\psi(3770)$

 Γ_{171}/Γ_{31}

NODE=S032C37
NODE=S032C37
NODE=S032C37

 $\Gamma(3\pi^+ 3\pi^-)/\Gamma(K^- 2\pi^+ \pi^-)$

<u>VALUE (units 10⁻³)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
5.23 ± 0.59 ± 1.35	149 ± 17	LINK	04B	FOCS $\gamma A, \bar{E}_\gamma \approx 180$ GeV

 Γ_{172}/Γ_{67}

NODE=S032S2
NODE=S032S2

 $\Gamma(3\pi^+ 3\pi^-)/\Gamma(K^- 3\pi^+ 2\pi^-)$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.93 ± 0.47 ± 0.48	¹ LINK	04B	FOCS $\gamma A, \bar{E}_\gamma \approx 180$ GeV

 Γ_{172}/Γ_{93}

NODE=S032R79
NODE=S032R79

 $\Gamma(\eta'(958)\pi^0)/\Gamma_{\text{total}}$ Unseen decay modes of the $\eta'(958)$ are included.

<u>VALUE (units 10⁻⁴)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				
8.1 ± 1.5 ± 0.6	50 ± 9	ARTUSO	08	CLEO See MENDEZ 10

 Γ_{173}/Γ

NODE=S032C66
NODE=S032C66
NODE=S032C66

 $\Gamma(\eta'(958)\pi^0)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ Unseen decay modes of the $\eta'(958)$ are included.

<u>VALUE (units 10⁻²)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2.3 ± 0.4 OUR FIT				
2.3 ± 0.3 ± 0.2	159 ± 19	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

 $\Gamma_{173}/(\Gamma_{31} + \Gamma_{222})$

NODE=S032B05
NODE=S032B05
NODE=S032B05

 $\Gamma(\eta'(958)\pi^+ \pi^-)/\Gamma_{\text{total}}$ Unseen decay modes of the $\eta'(958)$ are included.

<u>VALUE (units 10⁻⁴)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4.5 ± 1.6 ± 0.5	21 ± 8	ARTUSO	08	CLEO $e^+ e^-$ at $\psi(3770)$

 Γ_{174}/Γ

NODE=S032C67
NODE=S032C67
NODE=S032C67

 $\Gamma(2\eta)/\Gamma_{\text{total}}$ Unseen decay modes of the η are included.

<u>VALUE (units 10⁻⁴)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				
16.7 ± 1.4 ± 1.3	255 ± 22	ARTUSO	08	CLEO See MENDEZ 10

 Γ_{175}/Γ

NODE=S032C68
NODE=S032C68
NODE=S032C68

 $\Gamma(2\eta)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ Unseen decay modes of the η are included.

<u>VALUE (units 10⁻²)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4.3 ± 0.5 OUR FIT				
4.3 ± 0.3 ± 0.4	430 ± 29	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

 $\Gamma_{175}/(\Gamma_{31} + \Gamma_{222})$

NODE=S032B06
NODE=S032B06
NODE=S032B06

$\Gamma(\eta\eta'(958))/\Gamma_{\text{total}}$ Unseen decay modes of the η and $\eta'(958)$ are included.

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$				
$12.6 \pm 2.5 \pm 1.1$	46 ± 9	ARTUSO	08	CLEO See MENDEZ 10

 Γ_{176}/Γ

NODE=S032C69

NODE=S032C69

NODE=S032C69

 $\Gamma(\eta\eta'(958))/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$ $\Gamma_{176}/(\Gamma_{31} + \Gamma_{222})$ Unseen decay modes of the η and $\eta'(958)$ are included.

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
2.7±0.7 OUR FIT				
$2.7 \pm 0.6 \pm 0.3$	66 ± 15	MENDEZ	10	CLEO $e^+ e^-$ at 3774 MeV

NODE=S032B07

NODE=S032B07

NODE=S032B07

Hadronic modes with a $K\bar{K}$ pair $\Gamma(K^+K^-)/\Gamma_{\text{total}}$ Γ_{177}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
3.96±0.08 OUR FIT Error includes scale factor of 1.4.				

 $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$

$4.08 \pm 0.08 \pm 0.09$	4746 ± 74	BONVICINI	08	CLEO See MENDEZ 10
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NODE=S032330

 $\Gamma(K^+K^-)/\Gamma(K^-\pi^+)$ Γ_{177}/Γ_{31}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.1021±0.0015 OUR FIT Error includes scale factor of 1.7.				

0.1010±0.0016 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.

$0.122 \pm 0.011 \pm 0.004$	242 ± 20	ABLIKIM	05F	BES	$e^+ e^- \approx \psi(3770)$
$0.0992 \pm 0.0011 \pm 0.0012$	$16k \pm 200$	ACOSTA	05C	CDF	$p\bar{p}, \sqrt{s}=1.96 \text{ TeV}$
$0.0993 \pm 0.0014 \pm 0.0014$	$11k$	LINK	03	FOCS	γ nucleus, $\bar{E}_\gamma \approx 180 \text{ GeV}$
$0.1040 \pm 0.0033 \pm 0.0027$	1900	CSORNA	02	CLE2	$e^+ e^- \approx \Upsilon(4S)$
$0.109 \pm 0.003 \pm 0.003$	3317	AITALA	98C	E791	π^- nucleus, 500 GeV
$0.116 \pm 0.007 \pm 0.007$	1102	ASNER	96B	CLE2	$e^+ e^- \approx \Upsilon(4S)$
$0.109 \pm 0.007 \pm 0.009$	581	FRABETTI	94C	E687	γ Be $\bar{E}_\gamma = 220 \text{ GeV}$
$0.107 \pm 0.010 \pm 0.009$	193	ANJOS	91D	E691	Photoproduction
$0.117 \pm 0.010 \pm 0.007$	249	ALEXANDER	90	CLEO	$e^+ e^-$ 10.5–11 GeV

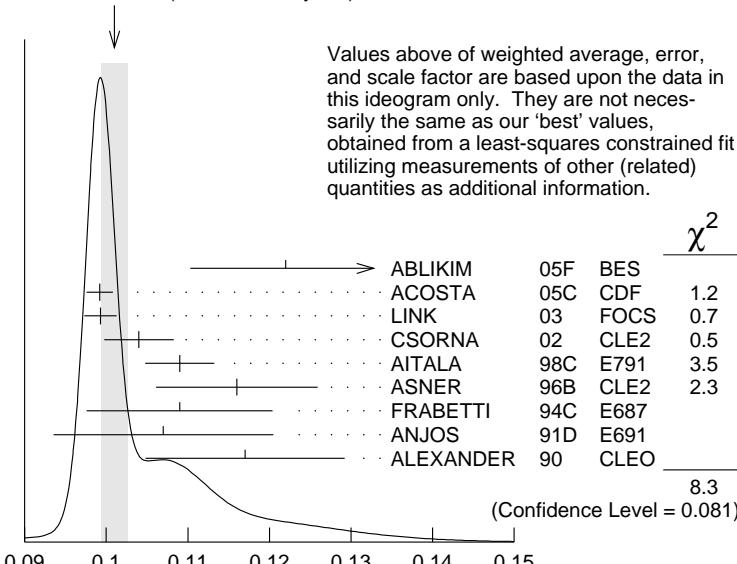
 $\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$

$0.107 \pm 0.029 \pm 0.015$	103	ADAMOVICH	92	OMEG	π^- 340 GeV
$0.138 \pm 0.027 \pm 0.010$	155	FRABETTI	92	E687	γ Be
0.16 ± 0.05	34	ALVAREZ	91B	NA14	Photoproduction
$0.10 \pm 0.02 \pm 0.01$	131	ALBRECHT	90C	ARG	$e^+ e^- \approx 10 \text{ GeV}$
$0.122 \pm 0.018 \pm 0.012$	118	BALTRUSAIT..	85E	MRK3	$e^+ e^-$ 3.77 GeV
0.113 ± 0.030		ABRAMS	79D	MRK2	$e^+ e^-$ 3.77 GeV

NODE=S032R27

NODE=S032R27

WEIGHTED AVERAGE
 0.1010 ± 0.0016 (Error scaled by 1.4)

 $\Gamma(K^+K^-)/\Gamma(K^-\pi^+)$

$\Gamma(K^+K^-)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$	$\Gamma_{177}/(\Gamma_{31} + \Gamma_{222})$			
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10.18 ± 0.15 OUR FIT	Error includes scale factor of 1.7.			
10.41 ± 0.11 ± 0.12	13.8k	MENDEZ	10	CLEO e^+e^- at 3774 MeV

NODE=S032B08
NODE=S032B08

$\Gamma(K^+K^-)/\Gamma(\pi^+\pi^-)$	$\Gamma_{177}/\Gamma_{132}$
The unused results here are redundant with $\Gamma(K^+K^-)/\Gamma(K^-\pi^+)$ and $\Gamma(\pi^+\pi^-)/\Gamma(K^-\pi^+)$ measurements by the same experiments.	

NODE=S032R91
NODE=S032R91

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				

2.760 ± 0.040 ± 0.034	7334	ACOSTA	05C	CDF $p\bar{p}$, $\sqrt{s}=1.96$ TeV
2.81 ± 0.10 ± 0.06		LINK	03	FOCS γ nucleus, $\bar{E}_\gamma \approx 180$ GeV
2.96 ± 0.16 ± 0.15	710	CSORNA	02	CLE2 $e^+e^- \approx \Upsilon(4S)$
2.75 ± 0.15 ± 0.16		AITALA	98C	E791 π^- nucleus, 500 GeV
2.53 ± 0.46 ± 0.19		FRABETTI	94C	E687 γ Be $\bar{E}_\gamma = 220$ GeV
2.23 ± 0.81 ± 0.46		ADAMOVICH	92	OMEG π^- 340 GeV
1.95 ± 0.34 ± 0.22		ANJOS	91D	E691 Photoproduction
2.5 ± 0.7		ALBRECHT	90C	ARG $e^+e^- \approx 10$ GeV
2.35 ± 0.37 ± 0.28		ALEXANDER	90	CLEO e^+e^- 10.5–11 GeV

$\Gamma(2K_S^0)/\Gamma_{\text{total}}$	Γ_{178}/Γ			
<u>VALUE (units 10^{-4})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •				

1.46 ± 0.32 ± 0.09	68 ± 15	BONVICINI	08	CLEO See MENDEZ 10
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NODE=S032C71
NODE=S032C71

$\Gamma(2K_S^0)/[\Gamma(K^-\pi^+) + \Gamma(K^+\pi^-)]$	$\Gamma_{178}/(\Gamma_{31} + \Gamma_{222})$			
<u>VALUE (units 10^{-2})</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.45 ± 0.11 OUR FIT	Error includes scale factor of 2.5. $[(0.45 \pm 0.11) \times 10^{-2}$ OUR 2012 FIT Scale factor = 2.5]			
0.41 ± 0.04 ± 0.02	215 ± 23	MENDEZ	10	CLEO e^+e^- at 3774 MeV

NODE=S032B09
NODE=S032B09

NEW

$\Gamma(2K_S^0)/\Gamma(K_S^0\pi^+\pi^-)$	Γ_{178}/Γ_{35}
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This is the same as $\Gamma(K^0\bar{K}^0)/\Gamma(\bar{K}^0\pi^+\pi^-)$ because $D^0 \rightarrow K_S^0 K_L^0$ is forbidden by CP conservation.

<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.0061 ± 0.0015 OUR FIT Error includes scale factor of 2.2.				

0.0120 ± 0.0022 OUR AVERAGE

0.0144 ± 0.0032 ± 0.0016	79 ± 17	LINK	05A	FOCS γ Be, $\bar{E}_\gamma \approx 180$ GeV
0.0101 ± 0.0022 ± 0.0016	26	ASNER	96B	CLE2 $e^+e^- \approx \Upsilon(4S)$
0.039 ± 0.013 ± 0.013	20 ± 7	FRABETTI	94J	E687 γ Be $\bar{E}_\gamma = 220$ GeV

• • • We do not use the following data for averages, fits, limits, etc. **• • •**

0.021 $^{+0.011}_{-0.008}$ ± 0.002	5	ALEXANDER	90	CLEO e^+e^- 10.5–11 GeV
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NODE=S032R90
NODE=S032R90

NODE=S032R90

$\Gamma(K_S^0 K^-\pi^+)/\Gamma(K^-\pi^+)$	Γ_{179}/Γ_{31}		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>

NODE=S032B1

NODE=S032B1

NEW

0.091 ± 0.014 OUR FIT	Error includes scale factor of 1.2. [0.086 ± 0.013 OUR 2012 FIT Scale factor = 1.1]			
0.08 ± 0.03		¹ ANJOS	91	E691 γ Be 80–240 GeV

NODE=S032B1;LINKAGE=AJ

$\Gamma(K_S^0 K^-\pi^+)/\Gamma(K_S^0\pi^+\pi^-)$	Γ_{179}/Γ_{35}			
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.125 ± 0.017 OUR FIT	Error includes scale factor of 1.2. [0.118 ± 0.017 OUR 2012 FIT Scale factor = 1.1]			
0.119 ± 0.021 OUR AVERAGE	Error includes scale factor of 1.3.			

NODE=S032B20

NODE=S032B20

NEW

0.108 ± 0.019	61	AMMAR	91	CLEO $e^+e^- \approx 10.5$ GeV
0.16 ± 0.03 ± 0.02	39	ALBRECHT	90C	ARG $e^+e^- \approx 10$ GeV

$\Gamma(\bar{K}^*(892)^0 K_S^0, \bar{K}^* \rightarrow K^-\pi^+)/\Gamma(K_S^0\pi^+\pi^-)$	Γ_{180}/Γ_{35}			
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>

NODE=S032B25

NODE=S032B25

<0.019	90	AMMAR	91	CLEO $e^+e^- \approx 10.5$ GeV
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• • • We do not use the following data for averages, fits, limits, etc. **• • •**

<0.02	90	ALBRECHT	90C	ARG $e^+e^- \approx 10$ GeV
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$\Gamma(K_S^0 K^+ \pi^-)/\Gamma(K^- \pi^+)$ Γ_{181}/Γ_{31}

VALUE	DOCUMENT ID	TECN	COMMENT
0.055±0.009 OUR FIT	Error includes scale factor of 1.3. [0.066 ± 0.013 OUR 2012 FIT]		
0.05 ±0.025	¹ ANJOS 91 E691 γ Be 80–240 GeV		

¹ The factor 100 at the top of column 2 of Table I of ANJOS 91 should be omitted.

 $\Gamma(K_S^0 K^+ \pi^-)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{181}/Γ_{35}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.076±0.012 OUR FIT	Error includes scale factor of 1.3. [0.091 ± 0.017 OUR 2012 FIT]			
0.098±0.020	55 AMMAR 91 CLEO $e^+ e^- \approx 10.5$ GeV			

 $\Gamma(K_S^0 K^+ \pi^-)/\Gamma(K_S^0 K^- \pi^+)$ $\Gamma_{181}/\Gamma_{179}$

VALUE	DOCUMENT ID	TECN	COMMENT
0.61 ±0.06 OUR FIT	Error includes scale factor of 1.3.		
0.592±0.044±0.018	INSLER 12 CLEO $e^+ e^- \rightarrow D^0 \bar{D}^0$ at 3.77 GeV		

 $\Gamma(K^*(892)^0 K_S^0, K^{*0} \rightarrow K^+ \pi^-)/\Gamma(\bar{K}^*(892)^0 K_S^0, \bar{K}^{*0} \rightarrow K^- \pi^+)$ $\Gamma_{182}/\Gamma_{180}$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
0.356±0.034±0.007	¹ INSLER 12 CLEO $e^+ e^- \rightarrow D^0 \bar{D}^0$, 3.77 GeV			

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.010 90 AMMAR 91 CLEO $e^+ e^- \approx 10.5$ GeV

¹ Uses quantum correlations in $e^+ e^- \rightarrow D^0 \bar{D}^0$ at the $\psi(3770)$, where the signal side D decays to $K_S^0 K\pi$ and the tag-side D decays to $K\pi$, $K\pi\pi\pi$, $K\pi\pi^0$.

 $\Gamma(K^+ K^- \pi^0)/\Gamma(K^- \pi^+ \pi^0)$ Γ_{183}/Γ_{50}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
2.37±0.03±0.04	11k±122 AUBERT,B 06X BABR $e^+ e^- \approx \gamma(4S)$			
• • • We do not use the following data for averages, fits, limits, etc. • • •				

0.95±0.26 151 ASNER 96B CLE2 $e^+ e^- \approx \gamma(4S)$

 $\Gamma(K^*(892)^+ K^-, K^*(892)^+ \rightarrow K^+ \pi^0)/\Gamma(K^+ K^- \pi^0)$ $\Gamma_{184}/\Gamma_{183}$

This is the “fit fraction” from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
44.4±0.8±0.6	AUBERT 07T BABR Dalitz fit II, 11k evts		

• • • We do not use the following data for averages, fits, limits, etc. • • •

46.1±3.1 ¹ CAWLFIELD 06A CLEO Dalitz fit, 627 ± 30 evts

¹ The error on this CAWLFIELD 06A result is statistical only.

 $\Gamma(K^*(892)^- K^+, K^*(892)^- \rightarrow K^- \pi^0)/\Gamma(K^+ K^- \pi^0)$ $\Gamma_{185}/\Gamma_{183}$

This is the “fit fraction” from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
15.9±0.7±0.6	AUBERT 07T BABR Dalitz fit II, 11k evts		

• • • We do not use the following data for averages, fits, limits, etc. • • •

12.3±2.2 ¹ CAWLFIELD 06A CLEO Dalitz fit, 627 ± 30 evts

¹ The error on this CAWLFIELD 06A result is statistical only.

 $\Gamma((K^+ \pi^0)_{S-wave} K^-)/\Gamma(K^+ K^- \pi^0)$ $\Gamma_{186}/\Gamma_{183}$

This is the “fit fraction” from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
71.1±3.7±1.9	¹ AUBERT 07T BABR Dalitz fit II, 11k evts		

¹ The only major difference between fits I and II in the AUBERT 07T analysis is in this mode, where the fit-I fraction is $(16.3 \pm 3.4 \pm 2.1)\%$.

 $\Gamma((K^- \pi^0)_{S-wave} K^+)/\Gamma(K^+ K^- \pi^0)$ $\Gamma_{187}/\Gamma_{183}$

This is the “fit fraction” from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
3.9±0.9±1.0	AUBERT 07T BABR Dalitz fit II, 11k evts		

NODE=S032B5

NODE=S032B5

NEW

NODE=S032B5;LINKAGE=AJ

NODE=S032B21

NODE=S032B21

NEW

NODE=S032Q26

NODE=S032Q26

NODE=S032B24

NODE=S032B24

NODE=S032B24;LINKAGE=IN

NODE=S032S28

NODE=S032S28

NODE=S032R02

NODE=S032R02

NODE=S032R02

NODE=S032R02;LINKAGE=CA

NODE=S032R03

NODE=S032R03

NODE=S032R03

NODE=S032R03;LINKAGE=CA

NODE=S032S08

NODE=S032S08

NODE=S032S08

NODE=S032S08;LINKAGE=AU

NODE=S032S09

NODE=S032S09

NODE=S032S09

$\Gamma(f_0(980)\pi^0, f_0 \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^0)$ $\Gamma_{188}/\Gamma_{183}$

This is the "fit fraction" from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
10.5±1.1±1.2	¹ AUBERT	07T BABR	Dalitz fit II, 11k evts

¹ When AUBERT 07T replace the $f_0(980)\pi^0$ mode with $a_0(980)\pi^0$, the fit fraction is a negligibly different ($11.0 \pm 1.5 \pm 1.2$)%.

 $\Gamma(\phi\pi^0, \phi \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^0)$ $\Gamma_{189}/\Gamma_{183}$

This is the "fit fraction" from the Dalitz-plot analysis with interference.

VALUE (units 10^{-2})	DOCUMENT ID	TECN	COMMENT
19.4±0.6±0.5	AUBERT	07T BABR	Dalitz fit II, 11k evts

• • • We do not use the following data for averages, fits, limits, etc. • • •

14.9±1.6	¹ CAWLFIELD	06A CLEO	Dalitz fit, 627 ± 30 evts
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¹ The error on this CAWLFIELD 06A result is statistical only.

 $\Gamma(K^+K^-\pi^0 \text{ nonresonant})/\Gamma(K^+K^-\pi^0)$ $\Gamma_{190}/\Gamma_{183}$

This is the "fit fraction" from the Dalitz-plot analysis with interference.

VALUE	DOCUMENT ID	TECN	COMMENT
<0.00059	ASNER	96B CLE2	$e^+e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.360±0.037	¹ CAWLFIELD	06A CLEO	Dalitz fit, 627 ± 30 evts
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¹ The error is statistical only. CAWLFIELD 06A also fits the Dalitz plot replacing this flat nonresonant background with broad S -wave $\kappa^\pm \rightarrow K^\pm\pi^0$ resonances. There is no significant improvement in the fit, and $K^{*\pm}K^\mp$ and $\phi\pi^0$ results are not much changed.

 $\Gamma(2K_S^0\pi^0)/\Gamma_{\text{total}}$ Γ_{191}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
<0.00059	ASNER	96B CLE2	$e^+e^- \approx \gamma(4S)$

 $\Gamma(\phi\pi^0)/\Gamma(K^+K^-)$ $\Gamma_{213}/\Gamma_{177}$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.194±0.006±0.009	1254	TAJIMA	04 BELL	$e^+e^- \text{ at } \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.194±0.006±0.009	1254	TAJIMA	04 BELL	$e^+e^- \text{ at } \gamma(4S)$
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 $\Gamma(\phi\eta)/\Gamma(K^+K^-)$ $\Gamma_{214}/\Gamma_{177}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
3.59±1.14±0.18	31	TAJIMA	04 BELL	$e^+e^- \text{ at } \gamma(4S)$

 $\Gamma(\phi\omega)/\Gamma_{\text{total}}$ Γ_{215}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.0021	90	ALBRECHT	94I ARG	$e^+e^- \approx 10 \text{ GeV}$

 $\Gamma(K^+K^-\pi^+\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{192}/Γ_{67}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
3.00±0.13 OUR AVERAGE				

2.95±0.11±0.08	2669 ± 101	¹ LINK	05G FOCS	$\gamma\text{Be}, \bar{E}_\gamma \approx 180 \text{ GeV}$
3.13±0.37±0.36	136 ± 15	AITALA	98D E791	$\pi^- \text{ nucleus}, 500 \text{ GeV}$
3.5 ± 0.4 ± 0.2	244 ± 26	FRABETTI	95C E687	$\gamma\text{Be}, \bar{E}_\gamma \approx 200 \text{ GeV}$

• • • We do not use the following data for averages, fits, limits, etc. • • •

4.4 ± 1.8 ± 0.5	19 ± 8	ABLIKIM	05F BES	$e^+e^- \approx \psi(3770)$
4.1 ± 0.7 ± 0.5	114 ± 20	ALBRECHT	94I ARG	$e^+e^- \approx 10 \text{ GeV}$
3.14 ± 1.0	89 ± 29	AMMAR	91 CLEO	$e^+e^- \approx 10.5 \text{ GeV}$
2.8 ± 0.8		ANJOS	91 E691	$\gamma\text{Be} 80\text{--}240 \text{ GeV}$

2.8 ± 0.7				
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¹ LINK 05G uses a smaller, cleaner subset of 1279 ± 48 events for the amplitude analysis that gives the results in the next data blocks.

 $\Gamma(\phi(\pi^+\pi^-)S\text{-wave}, \phi \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$ $\Gamma_{193}/\Gamma_{192}$

This is the fraction from a coherent amplitude analysis.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
10.3±1.3 OUR AVERAGE	[0.01 ± 0.01 OUR 2012 AVERAGE]		

10.3±1.0±0.8	ARTUSO	12 CLEO	Fitting 2959 evts.
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• • • We do not use the following data for averages, fits, limits, etc. • • •

1 ± 1	LINK	05G FOCS	Fits 1279 ± 48 evts.
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NODE=S032S11

NODE=S032S11

NODE=S032S11

NODE=S032S11;LINKAGE=AU

NODE=S032R04;LINKAGE=CA

NODE=S032R05;LINKAGE=CW

NODE=S032S27

NODE=S032S27

NODE=S032C99

NODE=S032C99

NODE=S032B93

NODE=S032B93

NODE=S032B9

NODE=S032B9

NODE=S032Q02

NODE=S032Q02

NODE=S032Q02

NEW

$\Gamma((\phi\rho^0)_{S-wave}, \phi \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{194}/\Gamma_{192}$	NODE=S032Q03 NODE=S032Q03 NODE=S032Q03 NEW
This is the fraction from a coherent amplitude analysis.		
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
38 ±5 OUR AVERAGE [0.29 ± 0.022 OUR 2012 AVERAGE]		
38.3±2.5±3.8	ARTUSO 12 CLEO	Fitting 2959 evts.
• • • We do not use the following data for averages, fits, limits, etc. • • •		
29 ±2 ±1	LINK 05G FOCS	Fits 1279 ± 48 evts.
$\Gamma((\phi\rho^0)_{D-wave}, \phi \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{195}/\Gamma_{192}$	NODE=S032Q16 NODE=S032Q16
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
3.4±0.7±0.6	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma((K^{*0}\bar{K}^{*0})_{S-wave}, K^{*0} \rightarrow K^\pm\pi^\mp)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{196}/\Gamma_{192}$	NODE=S032Q17 NODE=S032Q17
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
6.1±0.8±0.9	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma((K^-\pi^+)_{P-wave}, (K^+\pi^-)_{S-wave})/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{197}/\Gamma_{192}$	NODE=S032Q18 NODE=S032Q18
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
10.9±1.2±1.7	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K_1(1270)^+K^-, K_1(1270)^+ \rightarrow K^{*0}\pi^+)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{198}/\Gamma_{192}$	NODE=S032Q19 NODE=S032Q19
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
7.3±0.8±1.9	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K_1(1270)^+K^-, K_1(1270)^+ \rightarrow \rho^0 K^+)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{199}/\Gamma_{192}$	NODE=S032Q20 NODE=S032Q20
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
4.7±0.7±0.8	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K_1(1270)^-K^+, K_1(1270)^- \rightarrow \bar{K}^{*0}\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{200}/\Gamma_{192}$	NODE=S032Q21 NODE=S032Q21
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
0.9±0.3±0.4	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K_1(1270)^-K^+, K_1(1270)^- \rightarrow \rho^0 K^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{201}/\Gamma_{192}$	NODE=S032Q22 NODE=S032Q22
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
6.0±0.8±0.6	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K^*(1410)^+K^-, K^*(1410)^+ \rightarrow K^{*0}\pi^+)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{202}/\Gamma_{192}$	NODE=S032Q23 NODE=S032Q23
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
4.2±0.7±0.8	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K^*(1410)^-K^+, K^*(1410)^- \rightarrow \bar{K}^{*0}\pi^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{203}/\Gamma_{192}$	NODE=S032Q24 NODE=S032Q24
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
4.7±0.7±0.7	ARTUSO 12 CLEO	Fitting 2959 evts.
$\Gamma(K^+K^-\rho^0 3\text{-body})/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{204}/\Gamma_{192}$	NODE=S032Q04 NODE=S032Q04 NODE=S032Q04
This is the fraction from a coherent amplitude analysis.		
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •		
2±2±2	LINK 05G FOCS	Fits 1279 ± 48 evts.
$\Gamma(f_0(980)\pi^+\pi^-, f_0 \rightarrow K^+K^-)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{205}/\Gamma_{192}$	NODE=S032Q05 NODE=S032Q05 NODE=S032Q05
This is the fraction from a coherent amplitude analysis.		
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •		
15±3±2	LINK 05G FOCS	Fits 1279 ± 48 evts.
$\Gamma(K^*(892)^0 K^\mp\pi^\pm 3\text{-body}, K^{*0} \rightarrow K^\pm\pi^\mp)/\Gamma(K^+K^-\pi^+\pi^-)$	$\Gamma_{206}/\Gamma_{192}$	NODE=S032Q06 NODE=S032Q06 NODE=S032Q06
This is the fraction from a coherent amplitude analysis.		
<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u> <u>COMMENT</u>
• • • We do not use the following data for averages, fits, limits, etc. • • •		
11±2±1	LINK 05G FOCS	Fits 1279 ± 48 evts.

$\Gamma(K^*(892)^0 \bar{K}^*(892)^0, K^{*0} \rightarrow K^\pm \pi^\mp) / \Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{207}/\Gamma_{192}$

This is the fraction from a coherent amplitude analysis.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
3±2±1	LINK	05G FOCS	Fits 1279 ± 48 evts.

 $\Gamma(K_1(1270)^\pm K^\mp, K_1(1270)^\pm \rightarrow K^\pm \pi^+ \pi^-) / \Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{208}/\Gamma_{192}$

This is the fraction from a coherent amplitude analysis.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
33±6±4	¹ LINK	05G FOCS	Fits 1279 ± 48 evts.
¹ This LINK 05G value includes $K_1(1270)^\pm \rightarrow \rho^0 K^\pm, \rightarrow K_0^*(1430)^0 \pi^\pm$, and $K^*(892)^0 \pi^\pm$.			

 $\Gamma(K_1(1400)^\pm K^\mp, K_1(1400)^\pm \rightarrow K^\pm \pi^+ \pi^-) / \Gamma(K^+ K^- \pi^+ \pi^-)$ $\Gamma_{209}/\Gamma_{192}$

This is the fraction from a coherent amplitude analysis.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
22±3±4	LINK	05G FOCS	Fits 1279 ± 48 evts.

 $\Gamma(2K_S^0 \pi^+ \pi^-) / \Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{210}/Γ_{35}

VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
4.3 ± 0.8 OUR AVERAGE				
4.16±0.70±0.42	113 ± 21	LINK	05A FOCS	γ Be, $\bar{E}_\gamma \approx 180$ GeV
6.2 ± 2.0 ± 1.6	25	ALBRECHT	94I ARG	$e^+ e^- \approx 10$ GeV

 $\Gamma(K_S^0 K^- 2\pi^+ \pi^-) / \Gamma(K_S^0 2\pi^+ 2\pi^-)$ Γ_{211}/Γ_{87}

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.054	90	LINK	04D FOCS	γ A, $\bar{E}_\gamma \approx 180$ GeV

 $\Gamma(K^+ K^- \pi^+ \pi^- \pi^0) / \Gamma_{\text{total}}$ Γ_{212}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
0.0031±0.0020	¹ BARLAG	92C ACCM	π^- Cu 230 GeV

¹ BARLAG 92C computes the branching fraction using topological normalization.

Radiative modes

 $\Gamma(\rho^0 \gamma) / \Gamma_{\text{total}}$ Γ_{216}/Γ

VALUE	CL%	DOCUMENT ID	TECN
<2.4 × 10 ⁻⁴	90	ASNER	98 CLE2

 $\Gamma(\omega \gamma) / \Gamma_{\text{total}}$ Γ_{217}/Γ

VALUE	CL%	DOCUMENT ID	TECN
<2.4 × 10 ⁻⁴	90	ASNER	98 CLE2

 $\Gamma(\phi \gamma) / \Gamma(K^+ K^-)$ $\Gamma_{218}/\Gamma_{177}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
6.8 ± 0.9 OUR FIT				
6.31 ^{+1.70+0.30} _{-1.48-0.36}	28	TAJIMA	04 BELL	$e^+ e^-$ at $\gamma(4S)$

 $\Gamma(\phi \gamma) / \Gamma(K^- \pi^+)$ Γ_{218}/Γ_{31}

VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
7.0 ± 0.9 OUR FIT				
7.15 ^{+0.78+0.69} _{-0.51-0.70}	243 ± 25	AUBERT	08AZ BABR	$e^+ e^- \approx 10.6$ GeV

 $\Gamma(\bar{K}^*(892)^0 \gamma) / \Gamma(K^- \pi^+)$ Γ_{219}/Γ_{31}

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
8.43 ^{+0.51+0.70} _{-0.43-0.56}	2286 ± 113	AUBERT	08AZ BABR	$e^+ e^- \approx 10.6$ GeV

NODE=S032Q07

NODE=S032Q07

NODE=S032Q07

NODE=S032Q08

NODE=S032Q08

NODE=S032Q08;LINKAGE=LI

NODE=S032Q09

NODE=S032Q09

NODE=S032Q09

NODE=S032B94

NODE=S032B94

NODE=S032S93

NODE=S032S93

NODE=S032B32

NODE=S032B32

NODE=S032333

NODE=S032S61

NODE=S032S61

NODE=S032S62

NODE=S032S62

NODE=S032S88

NODE=S032S88

NODE=S032S98

NODE=S032S98

NODE=S032S99

NODE=S032S99

Doubly Cabibbo-suppressed / Mixing modes

 $\Gamma(K^+\ell^-\bar{\nu}_\ell \text{ via } \bar{D}^0)/\Gamma(K^-\ell^+\nu_\ell)$ **Γ_{220}/Γ_{17}**

This is a limit on R_M without the complications of possible doubly Cabibbo-suppressed decays that occur when using hadronic modes. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 6.1 \times 10^{-4}$	90	¹ BITENC	08 BELL	$e^+ e^-$, 10.58 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

$< 50 \times 10^{-4}$	90	² AITALA	96C E791	π^- nucleus, 500 GeV
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¹ The BITENC 08 right-sign sample includes about 15% of $D^0 \rightarrow K^-\pi^0\ell^+\nu_\ell$ and other decays.

² AITALA 96C uses $D^{*+} \rightarrow D^0\pi^+$ (and charge conjugate) decays to identify the charm at production and $D^0 \rightarrow K^-\ell^+\nu_\ell$ (and charge conjugate) decays to identify the charm at decay.

 $\Gamma(K^+ \text{ or } K^*(892)^+ e^- \bar{\nu}_e \text{ via } \bar{D}^0)/[\Gamma(K^- e^+ \nu_e) + \Gamma(K^*(892)^- e^+ \nu_e)]$
 $\Gamma_{221}/(\Gamma_{18} + \Gamma_{20})$

This is a limit on R_M without the complications of possible doubly Cabibbo-suppressed decays that occur when using hadronic modes. The experiments use $D^{*+} \rightarrow D^0\pi^+$ (and charge conjugate) decays to identify the charm at production and the charge of the e to identify the charm at decay. These limits do not allow CP violation. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 0.001	90	BITENC	05 BELL	$e^+ e^- \approx 10.6$ GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

$-0.0013 < R < +0.0012$	90	AUBERT	07AB BABR	$e^+ e^- \approx 10.58$ GeV
< 0.0078	90	CAWLFIELD	05 CLEO	$e^+ e^- \approx 10.6$ GeV
< 0.0042	90	AUBERT,B	04Q BABR	See AUBERT 07AB

 $\Gamma(K^+\pi^-)/\Gamma(K^-\pi^+)$ **Γ_{222}/Γ_{31}**

This is R , the time-integrated wrong-sign rate compared to the right-sign rate. See the note on “ D^0 - \bar{D}^0 Mixing,” near the start of the D^0 Listings.

The experiments here use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0)\pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born. The $D^0 \rightarrow K^+\pi^-$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \rightarrow \bar{D}^0$ mixing followed by $\bar{D}^0 \rightarrow K^+\pi^-$ decay. Some of the experiments can use the decay-time information to disentangle the two mechanisms. Here, we list the experimental branching ratio, which if there is no mixing is the DCS ratio. See the next data block for values of the DCS ratio R_D , and the following data block for limits on the mixing ratio R_M . See the section on CP -violating asymmetries near the end of this D^0 Listing for values of A_D , and the note on “ D^0 - \bar{D}^0 Mixing” for limits on x' and y'.

Some early limits have been omitted from this Listing; see our 1998 edition (The European Physical Journal **C3** 1 (1998)) and our 2006 edition (Journal of Physics, G **33** 1 (2006)).

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
3.79 ± 0.18 OUR FIT	Error includes scale factor of 3.3.			

3.79 ± 0.18 OUR AVERAGE Error includes scale factor of 3.3. See the ideogram below.

4.15 ± 0.10	$12.7 \pm 0.3k$	¹ AALTONEN	08E CDF	$p\bar{p}, \sqrt{s} = 1.96$ TeV
$3.53 \pm 0.08 \pm 0.04$	4030 ± 90	² AUBERT	07W BABR	$e^+ e^- \approx 10.6$ GeV
$3.77 \pm 0.08 \pm 0.05$	4024 ± 88	¹ ZHANG	06 BELL	$e^+ e^-$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$4.05 \pm 0.21 \pm 0.11$	$2.0 \pm 0.1k$	³ ABULENCIA	06X CDF	See AALTONEN 08E
$3.81 \pm 0.17^{+0.08}_{-0.16}$	845 ± 40	² LI	05A BELL	See ZHANG 06

$4.29^{+0.63}_{-0.61} \pm 0.27$	234	⁴ LINK	05H FOCS	γ nucleus
$3.57 \pm 0.22 \pm 0.27$		⁵ AUBERT	03Z BABR	See AUBERT 07W
$4.04 \pm 0.85 \pm 0.25$	149	⁶ LINK	01 FOCS	γ nucleus
$3.32^{+0.63}_{-0.65} \pm 0.40$	45	¹ GODANG	00 CLE2	$e^+ e^-$

$6.8^{+3.4}_{-3.3} \pm 0.7$	34	² AITALA	98 E791	π^- nucl., 500 GeV
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NODE=S032335

NODE=S032S26

NODE=S032S26

NODE=S032S26

NODE=S032S26;LINKAGE=BI

NODE=S032S26;LINKAGE=A

NODE=S032S01

NODE=S032S01

NODE=S032S01

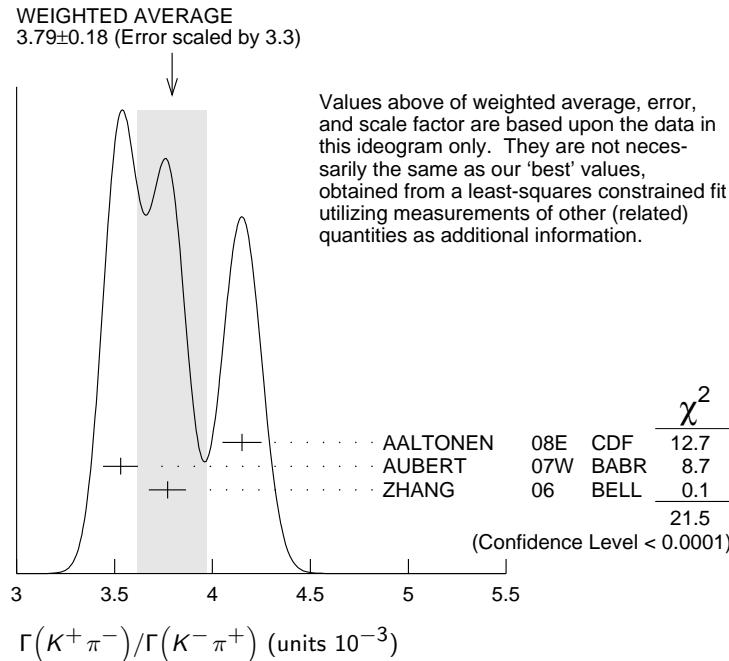
NODE=S032R61

NODE=S032R61

NODE=S032R61

- ¹ GODANG 00, ZHANG 06, and AALTONEN 08E allow *CP* violation.
² AITALA 98, LI 05A, and AUBERT 07W assume no *CP* violation.
³ This ABULENCIA 06x result assumes no mixing.
⁴ This LINK 05H result assumes no mixing but allows *CP* violation. If neither mixing nor *CP* violation is allowed, $R = (4.29 \pm 0.63 \pm 0.28) \times 10^{-3}$.
⁵ This AUBERT 03Z result allows *CP* violation. If *CP* violation is not allowed, $R = 0.00359 \pm 0.00020 \pm 0.00027$.
⁶ This LINK 01 result assumes no mixing or *CP* violation.

NODE=S032R61;LINKAGE=ZH
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 NODE=S032R61;LINKAGE=AB
 NODE=S032R61;LINKAGE=LI
 NODE=S032R61;LINKAGE=AU
 NODE=S032R61;LINKAGE=KL



$\Gamma(K^+\pi^- \text{ via DCS})/\Gamma(K^-\pi^+)$

Γ_{223}/Γ_{31}

This is R_D , the doubly Cabibbo-suppressed ratio when mixing is allowed.

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
3.37 ± 0.21 OUR AVERAGE	Error includes scale factor of 1.8. See the ideogram below.				
3.04 ± 0.55	12.7 ± 0.3k	AALTONEN	08E	CDF	$p\bar{p}, \sqrt{s} = 1.96 \text{ TeV}$
3.03 ± 0.16 ± 0.10	4030 ± 90	¹ AUBERT	07W	BABR	$e^+e^- \approx 10.6 \text{ GeV}$
3.64 ± 0.17	4024 ± 88	² ZHANG	06	BELL	e^+e^-
5.17 ± 1.47 ± 0.76	234	³ LINK	05H	FOCS	γ nucleus
4.8 ± 1.2 ± 0.4	45	⁴ GODANG	00	CLE2	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.87 ± 0.37	845 ± 40	LI	05A	BELL	See ZHANG 06
$2.3 < R_D < 5.2$	95	⁵ AUBERT	03Z	BABR	See AUBERT 07W
9.0 ± 12.0 ± 4.4	34	⁶ AITALA	98	E791	π^- nucl., 500 GeV

¹ This AUBERT 07W result is the same whether or not *CP* violation is allowed.

² This ZHANG 06 assumes no *CP* violation.

³ This LINK 05H result allows *CP* violation. Allowing mixing but not *CP* violation, $R_D = (3.81 \pm 1.67 \pm 0.92) \times 10^{-3}$.

⁴ This GODANG 00 result allows *CP* violation.

⁵ This AUBERT 03Z result allows *CP* violation. If only mixing is allowed, the 95% confidence level interval is $(2.4 < R_D < 4.9) \times 10^{-3}$.

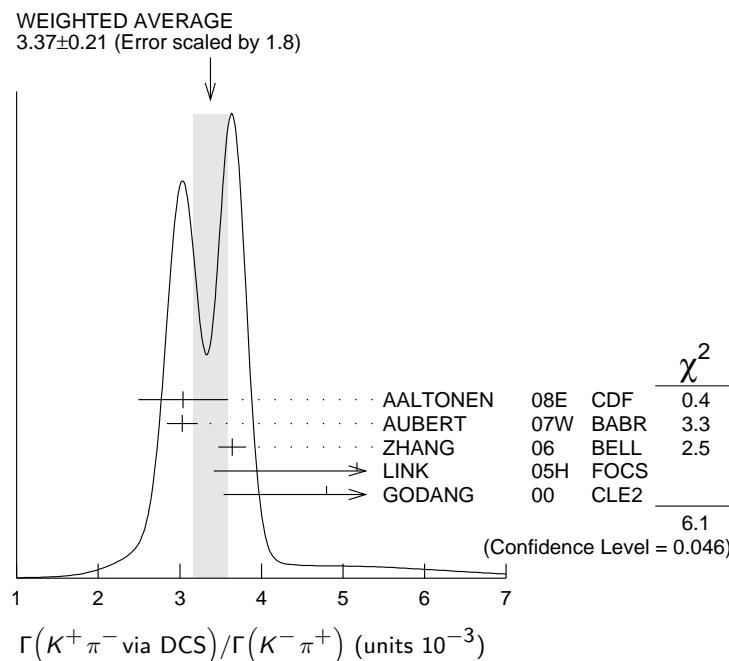
⁶ This AITALA 98 result assumes no *CP* violation.

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 NODE=S032R08

NODE=S032R08;LINKAGE=UB
 NODE=S032R08;LINKAGE=ZH
 NODE=S032R08;LINKAGE=LI

NODE=S032R08;LINKAGE=GO
 NODE=S032R08;LINKAGE=AU

NODE=S032R08;LINKAGE=AT



This is R_M in the note on “ D^0 - \bar{D}^0 Mixing” near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0) \pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<0.00040	95		1 ZHANG	06 BELL	$e^+ e^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.00046	95		2 LI	05A BELL	See ZHANG 06
<0.0063	95		3 LINK	05H FOCS	γ nucleus
<0.0013	95		4 AUBERT	03Z BABR	$e^+ e^-$, 10.6 GeV
<0.00041	95		5 GODANG	00 CLE2	$e^+ e^-$
<0.0092	95		6 BARATE	98W ALEP	$e^+ e^-$ at Z^0
<0.005	90	1 ± 4	7 ANJOS	88C E691	Photoproduction

1 This ZHANG 06 result allows CP violation, but the result does not change if CP violation is not allowed.

2 This LI 05A result allows CP violation. The limit becomes < 0.00042 (95% CL) if CP violation is not allowed.

3 LINK 05H obtains the same result whether or not CP violation is allowed.

4 This AUBERT 03Z result allows CP violation and assumes that the strong phase between $D^0 \rightarrow K^+\pi^-$ and $\bar{D}^0 \rightarrow K^+\pi^-$ is small, and limits only $D^0 \rightarrow \bar{D}^0$ transitions via off-shell intermediate states. The limit on transitions via on-shell intermediate states is 0.0016.

5 This GODANG 00 result allows CP violation and assumes that the strong phase between $D^0 \rightarrow K^+\pi^-$ and $\bar{D}^0 \rightarrow K^+\pi^-$ is small, and limits only $D^0 \rightarrow \bar{D}^0$ transitions via off-shell intermediate states. The limit on transitions via on-shell intermediate states is 0.0017.

6 This BARATE 98W result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on “ D^0 - \bar{D}^0 Mixing” near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.036 (95% CL).

7 This ANJOS 88C result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on “ D^0 - \bar{D}^0 Mixing” near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.019.

$\Gamma(K_S^0 \pi^+ \pi^- \text{ in } D^0 \rightarrow \bar{D}^0)/\Gamma(K_S^0 \pi^+ \pi^-)$ Γ_{225}/Γ_{35}

This is R_M in the note on “ D^0 - \bar{D}^0 Mixing” near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0) \pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.0063	95	1 ASNER	05 CLEO	$e^+ e^- \approx 10$ GeV

NODE=S032R9

NODE=S032R9

NODE=S032R9

NODE=S032R9;LINKAGE=ZH

NODE=S032R9;LINKAGE=LA

NODE=S032R9;LINKAGE=LI

NODE=S032R9;LINKAGE=AU

NODE=S032R9;LINKAGE=GD

NODE=S032R9;LINKAGE=F

NODE=S032R9;LINKAGE=AA

NODE=S032R75

NODE=S032R75

NODE=S032R75

¹This ASNER 05 limit allows *CP* violation. If *CP* violation is not allowed, the limit is 0.0042 at 95% CL.

$\Gamma(K^+\pi^-\pi^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{229}/Γ_{50}

The experiments here use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0) \pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born. The $D^0 \rightarrow K^+\pi^-\pi^0$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \rightarrow \bar{D}^0$ mixing followed by $\bar{D}^0 \rightarrow K^+\pi^-\pi^0$ decay.

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
2.20±0.10 OUR AVERAGE				
2.14±0.08±0.08	763 ± 51	¹ AUBERT,B	06N BABR	$e^+e^- \approx \gamma(4S)$
2.29±0.15 ^{+0.13} _{-0.09}	1978 ± 104	TIAN	05 BELL	$e^+e^- \approx \gamma(4S)$
4.3 ^{+1.1} _{-1.0} ± 0.7	38	BRANDENB...	01 CLE2	$e^+e^- \approx \gamma(4S)$

¹This AUBERT,B 06N result assumes no mixing.

$\Gamma(K^+\pi^-\pi^0 \text{ via } \bar{D}^0)/\Gamma(K^-\pi^+\pi^0)$ Γ_{230}/Γ_{50}

This is R_M in the note on " D^0 - \bar{D}^0 Mixing" near the start of the D^0 Listings. The experiments here (1) use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0) \pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_1 - m_2|$ and $(\Gamma_1 - \Gamma_2)/\Gamma$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
5.25^{+0.25}_{-0.31} ± 0.12		AUBERT	09AN BABR	$e^+e^- \text{ at } 10.58 \text{ GeV}$
<0.54	95	¹ AUBERT,B	06N BABR	$e^+e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

1 This AUBERT,B 06N limit assumes no *CP* violation. The measured value corresponding to the limit is $(2.3^{+1.8}_{-1.4} \pm 0.4) \times 10^{-4}$. If *CP* violation is allowed, this becomes $(1.0^{+2.2}_{-0.7} \pm 0.3) \times 10^{-4}$.

$\Gamma(K^+\pi^+2\pi^-)/\Gamma(K^-2\pi^+\pi^-)$ Γ_{231}/Γ_{67}

The experiments here use the charge of the pion in $D^*(2010)^\pm \rightarrow (D^0 \text{ or } \bar{D}^0) \pi^\pm$ decay to tell whether a D^0 or a \bar{D}^0 was born. The $D^0 \rightarrow K^+\pi^-\pi^+\pi^-$ decay can occur directly by doubly Cabibbo-suppressed (DCS) decay, or indirectly by $D^0 \rightarrow \bar{D}^0$ mixing followed by $\bar{D}^0 \rightarrow K^+\pi^-\pi^+\pi^-$ decay. Some of the experiments can use the decay-time information to disentangle the two mechanisms. Here, we list the experimental branching ratio, which if there is no mixing is the DCS ratio; in the next data block we give the limits on the mixing ratio.

Some early limits have been omitted from this Listing; see our 1998 edition (EPJ **C3** 1).

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
3.24^{+0.25}_{-0.22} OUR AVERAGE					
3.20±0.18 ^{+0.18} _{-0.13}	1721 ± 75	¹ TIAN	05 BELL	$e^+e^- \approx \gamma(4S)$	
4.4 ^{+1.3} _{-1.2} ± 0.4	54	¹ DYTMAN	01 CLE2	$e^+e^- \approx \gamma(4S)$	
2.5 ^{+3.6} _{-3.4} ± 0.3		² AITALA	98 E791	π^- nucl., 500 GeV	

• • • We do not use the following data for averages, fits, limits, etc. • • •

<18	90	¹ AMMAR	91 CLEO	$e^+e^- \approx 10.5 \text{ GeV}$
<18	90	5 ± 12	³ ANJOS	88C E691 Photoproduction

1 AMMAR 91 cannot distinguish between doubly Cabibbo-suppressed decay and D^0 - \bar{D}^0 mixing.

2 This AITALA 98 result assumes no D^0 - \bar{D}^0 mixing (R_M in the note on " D^0 - \bar{D}^0 Mixing"). It becomes $-0.0020^{+0.0117}_{-0.0106} \pm 0.0035$ when mixing is allowed and decay-time information is used to distinguish doubly Cabibbo-suppressed decays from mixing.

3 ANJOS 88C uses decay-time information to distinguish doubly Cabibbo-suppressed (DCS) decays from D^0 - \bar{D}^0 mixing. However, the result assumes no interference between the DCS and mixing amplitudes ($y' = 0$ in the note on " D^0 - \bar{D}^0 Mixing" near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.033.

NODE=S032R75;LINKAGE=AS

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NODE=S032C24

NODE=S032C24

NODE=S032C24;LINKAGE=UA

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NODE=S032R00

NODE=S032R00

NODE=S032R00;LINKAGE=AU

NODE=S032R62
NODE=S032R62

NODE=S032R62

NODE=S032R62;LINKAGE=G

NODE=S032R62;LINKAGE=AT

NODE=S032R62;LINKAGE=F

$\Gamma(K^+\pi^+2\pi^- \text{ via } \bar{D}^0)/\Gamma(K^-\pi^+\pi^-)$ Γ_{232}/Γ_{67}

This is a D^0 - \bar{D}^0 mixing limit. The experiments here (1) use the charge of the pion in $D^*(2010)^{\pm} \rightarrow (D^0 \text{ or } \bar{D}^0)\pi^{\pm}$ decay to tell whether a D^0 or a \bar{D}^0 was born; and (2) use the decay-time distribution to disentangle doubly Cabibbo-suppressed decay and mixing. For the limits on $|m_{D_1^0} - m_{D_2^0}|$ and $(\Gamma_{D_1^0} - \Gamma_{D_2^0})/\Gamma_{D^0}$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<0.005	90	0 ± 4	1 ANJOS	88C E691	Photoproduction

¹ ANJOS 88C uses decay-time information to distinguish doubly Cabibbo-suppressed (DCS) decays from D^0 - \bar{D}^0 mixing. However, the result assumes no interference between the DCS and mixing amplitudes ($y = 0$ in the note on “ D^0 - \bar{D}^0 Mixing” near the start of the D^0 Listings). When interference is allowed, the limit degrades to 0.007.

 $\Gamma(K^+\pi^- \text{ or } K^+\pi^+2\pi^- \text{ via } \bar{D}^0)/\Gamma(K^-\pi^+ \text{ or } K^-2\pi^+\pi^-)$ Γ_{233}/Γ_0

This is a D^0 - \bar{D}^0 mixing limit. For the limits on $|m_{D_1^0} - m_{D_2^0}|$ and $(\Gamma_{D_1^0} - \Gamma_{D_2^0})/\Gamma_{D^0}$ that come from the best mixing limit, see near the beginning of these D^0 Listings.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.0085	90	1 AITALA	98 E791	π^- nucleus, 500 GeV
<0.0037	90	2 ANJOS	88C E691	Photoproduction

¹ AITALA 98 uses decay-time information to distinguish doubly Cabibbo-suppressed decays from D^0 - \bar{D}^0 mixing. The fit allows interference between the two amplitudes, and also allows CP violation in this term. The central value obtained is $0.0039^{+0.0036}_{-0.0032} \pm 0.0016$. When interference is disallowed, the result becomes $0.0021 \pm 0.0009 \pm 0.0002$.

² This combines results of ANJOS 88C on $K^+\pi^-$ and $K^+\pi^-\pi^+\pi^-$ (via \bar{D}^0) reported in the data block above (see footnotes there). It assumes no interference.

 $\Gamma(\mu^- \text{ anything via } \bar{D}^0)/\Gamma(\mu^+ \text{ anything})$ Γ_{234}/Γ_6

This is a D^0 - \bar{D}^0 mixing limit. See the somewhat better limits above.

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.0056	90	LOUIS	86 SPEC	π^-W 225 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.012	90	BENVENUTI	85 CNTR	μC , 200 GeV
<0.044	90	BODEK	82 SPEC	π^- , $pFe \rightarrow D^0$

Rare or forbidden modes $\Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ Γ_{235}/Γ

$D^0 \rightarrow \gamma\gamma$ is a flavor-changing neutral-current decay, forbidden in the Standard Model at the tree level.

VALUE (units 10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
< 2.2 (CL = 90%)	[<0.033 (CL = 90%) OUR 2012 BEST LIMIT]			
< 2.2	90	LEES	12L BABR	$e^+e^- \approx 10.58$ GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

<29	90	COAN	03 CLE2	$e^+e^- \approx \gamma(4S)$
-----	----	------	---------	-----------------------------

 $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ Γ_{236}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by first-order weak interaction combined with electromagnetic interaction.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<7.9 × 10 ⁻⁸	90		PETRIC	10 BELL	$e^+e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

<1.7 × 10 ⁻⁷	90	1	LEES	12Q BABR	$e^+e^- \approx 10.58$ GeV
<1.2 × 10 ⁻⁶	90	3	AUBERT,B	04Y BABR	$e^+e^- \approx \gamma(4S)$
<8.19 × 10 ⁻⁶	90		PRIPSTEIN	00 E789	p nucleus, 800 GeV
<6.2 × 10 ⁻⁶	90		AITALA	99G E791	π^-N 500 GeV
<1.3 × 10 ⁻⁵	90	0	FREYBERGER	96 CLE2	$e^+e^- \approx \gamma(4S)$
<1.3 × 10 ⁻⁴	90		ADLER	88 MRK3	e^+e^- 3.77 GeV
<1.7 × 10 ⁻⁴	90	7	ALBRECHT	88 ARG	e^+e^- 10 GeV
<2.2 × 10 ⁻⁴	90	8	HAAS	88 CLEO	e^+e^- 10 GeV

NODE=S032S83

NODE=S032S83

NODE=S032S83

NODE=S032S83;LINKAGE=A

NODE=S032R99

NODE=S032R99

NODE=S032R99

NODE=S032R99;LINKAGE=AT

NODE=S032R99;LINKAGE=AN

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NODE=S032R8

NODE=S032R8

NODE=S032336

NODE=S032S84

NODE=S032S84

NODE=S032S84

NODE=S032R44

NODE=S032R44

NODE=S032R44

$\Gamma(\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{237}/Γ

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.4 \times 10^{-7}$	90		PETRIC	10	BELL $e^+ e^- \approx \gamma(4S)$
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$0.6\text{--}8.1 \times 10^{-7}$	90	8	1 LEES	12Q	BABR $e^+ e^- \approx 10.58 \text{ GeV}$
$<2.1 \times 10^{-7}$	90	4	AALTONEN	10X	CDF $p\bar{p}, \sqrt{s} = 1.96 \text{ TeV}$
$<2.0 \times 10^{-6}$	90		ABT	04	HERB $pA, 920 \text{ GeV}$
$<1.3 \times 10^{-6}$	90	1	AUBERT,B	04Y	BABR $e^+ e^- \approx \gamma(4S)$
$<2.5 \times 10^{-6}$	90		ACOSTA	03F	CDF See AALTONEN 10X
$<1.56 \times 10^{-5}$	90		PRIPSTEIN	00	E789 p nucleus, 800 GeV
$<5.2 \times 10^{-6}$	90		AITALA	99G	E791 $\pi^- N$ 500 GeV
$<4.1 \times 10^{-6}$	90		ADAMOVICH	97	BEAT $\pi^- Cu, W$ 350 GeV
$<4.2 \times 10^{-6}$	90		ALEXOPOU...	96	E771 $p Si, 800 \text{ GeV}$
$<3.4 \times 10^{-5}$	90	1	FREYBERGER	96	CLE2 $e^+ e^- \approx \gamma(4S)$
$<7.6 \times 10^{-6}$	90	0	ADAMOVICH	95	BEAT See ADAMOVICH 97
$<4.4 \times 10^{-5}$	90	0	KODAMA	95	E653 $\pi^- emulsion$ 600 GeV
$<3.1 \times 10^{-5}$	90		² MISHRA	94	E789 -4.1 ± 4.8 events
$<7.0 \times 10^{-5}$	90	3	ALBRECHT	88G	ARG $e^+ e^- 10 \text{ GeV}$
$<1.1 \times 10^{-5}$	90		LOUIS	86	SPEC $\pi^- W$ 225 GeV
$<3.4 \times 10^{-4}$	90		AUBERT	85	EMC Deep inelast. $\mu^- N$

1 LEES 12Q gives a 2-sided range.

2 Here MISHRA 94 uses "the statistical approach advocated by the PDG." For an alternate approach, giving a limit of 9×10^{-6} at 90% confidence level, see the paper. $\Gamma(\pi^0 e^+ e^-)/\Gamma_{\text{total}}$ Γ_{238}/Γ A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<4.5 \times 10^{-5}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(\pi^0 \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{239}/Γ A test for the $\Delta C=1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.8 \times 10^{-4}$	90	2	KODAMA	95	E653 $\pi^- emulsion$ 600 GeV
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<5.4 \times 10^{-4}$	90	3	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(\eta e^+ e^-)/\Gamma_{\text{total}}$ Γ_{240}/Γ A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.1 \times 10^{-4}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(\eta \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{241}/Γ A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<5.3 \times 10^{-4}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(\pi^+ \pi^- e^+ e^-)/\Gamma_{\text{total}}$ Γ_{242}/Γ A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.73 \times 10^{-4}$	90	9	AITALA	01C	E791 $\pi^- nucleus, 500 \text{ GeV}$

 $\Gamma(\rho^0 e^+ e^-)/\Gamma_{\text{total}}$ Γ_{243}/Γ A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.0 \times 10^{-4}$	90	2	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<1.24 \times 10^{-4}$	90	1	AITALA	01C	E791 $\pi^- nucleus, 500 \text{ GeV}$
$<4.5 \times 10^{-4}$	90	2	HAAS	88	CLEO $e^+ e^- 10 \text{ GeV}$

1 This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 1.8 \times 10^{-4}$ using a photon pole amplitude model.

NODE=S032R7

NODE=S032R7

NODE=S032R7

NODE=S032R7;LINKAGE=LE

NODE=S032R7;LINKAGE=B

NODE=S032S44

NODE=S032S44

NODE=S032S44

NODE=S032B95

NODE=S032B95

NODE=S032B95

NODE=S032S45

NODE=S032S45

NODE=S032S45

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NODE=S032S46

NODE=S032C14

NODE=S032C14

NODE=S032C14

NODE=S032R63

NODE=S032R63

NODE=S032R63

NODE=S032R63;LINKAGE=FB

$\Gamma(\pi^+\pi^-\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{244}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.0 \times 10^{-5}$	90	2	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\rho^0\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{245}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.2 \times 10^{-5}$	90	0	AITALA	01C E791	π^- nucleus, 500 GeV
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<4.9 \times 10^{-4}$	90	1	¹ FREYBERGER 96	CLE2	$e^+e^- \approx \gamma(4S)$
$<2.3 \times 10^{-4}$	90	0	KODAMA	E653	π^- emulsion 600 GeV
$<8.1 \times 10^{-4}$	90	5	HAAS	88	CLEO e^+e^- 10 GeV

¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 4.5 \times 10^{-4}$ using a photon pole amplitude model.

 $\Gamma(\omega e^+e^-)/\Gamma_{\text{total}}$ Γ_{246}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.8 \times 10^{-4}$	90	1	¹ FREYBERGER 96	CLE2	$e^+e^- \approx \gamma(4S)$

¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.7 \times 10^{-4}$ using a photon pole amplitude model.

 $\Gamma(\omega\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{247}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<8.3 \times 10^{-4}$	90	0	¹ FREYBERGER 96	CLE2	$e^+e^- \approx \gamma(4S)$

¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 6.5 \times 10^{-4}$ using a photon pole amplitude model.

 $\Gamma(K^-K^+e^+e^-)/\Gamma_{\text{total}}$ Γ_{248}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.15 \times 10^{-4}$	90	9	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\phi e^+e^-)/\Gamma_{\text{total}}$ Γ_{249}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<5.2 \times 10^{-5}$	90	2	¹ FREYBERGER 96	CLE2	$e^+e^- \approx \gamma(4S)$

$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$

$<5.9 \times 10^{-5}$	90	0	AITALA	01C E791	π^- nucleus, 500 GeV
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¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 7.6 \times 10^{-5}$ using a photon pole amplitude model.

 $\Gamma(K^-K^+\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{250}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.3 \times 10^{-5}$	90	0	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\phi\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_{251}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.1 \times 10^{-5}$	90	0	AITALA	01C E791	π^- nucleus, 500 GeV

$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$

$<4.1 \times 10^{-4}$	90	0	¹ FREYBERGER 96	CLE2	$e^+e^- \approx \gamma(4S)$
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¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.4 \times 10^{-4}$ using a photon pole amplitude model.

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NODE=S032R64

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NODE=S032R64;LINKAGE=FB

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NODE=S032C19

NODE=S032C19

NODE=S032C19

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NODE=S032S50

NODE=S032S50

NODE=S032S50;LINKAGE=FB

$\Gamma(K^0 e^+ e^-)/\Gamma_{\text{total}}$ Γ_{252}/Γ

Not a useful test for $\Delta C = 1$ weak neutral current because both quarks must change flavor.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.1 \times 10^{-4}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<1.7 \times 10^{-3}$	90		ADLER	89C MRK3	$e^+ e^-$ 3.77 GeV

 $\Gamma(K^0 \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{253}/Γ

Not a useful test for $\Delta C = 1$ weak neutral current because both quarks must change flavor.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.6 \times 10^{-4}$	90	2	KODAMA	95	E653 π^- emulsion 600 GeV
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<6.7 \times 10^{-4}$	90	1	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(K^- \pi^+ e^+ e^-)/\Gamma_{\text{total}}$ Γ_{254}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.85 \times 10^{-4}$	90	6	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\bar{K}^*(892)^0 e^+ e^-)/\Gamma_{\text{total}}$ Γ_{255}/Γ

Not a useful test for $\Delta C = 1$ weak neutral current because both quarks must change flavor.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<4.7 \times 10^{-5}$	90	2	AITALA	01C E791	π^- nucleus, 500 GeV
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<1.4 \times 10^{-4}$	90	1	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

¹ This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 2.0 \times 10^{-4}$ using a photon pole amplitude model.

 $\Gamma(K^- \pi^+ \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{256}/Γ

A test for the $\Delta C = 1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.59 \times 10^{-4}$	90	12	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\bar{K}^*(892)^0 \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{257}/Γ

Not a useful test for $\Delta C = 1$ weak neutral current because both quarks must change flavor.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.4 \times 10^{-5}$	90	3	AITALA	01C E791	π^- nucleus, 500 GeV
$\bullet \bullet \bullet$ We do not use the following data for averages, fits, limits, etc. $\bullet \bullet \bullet$					
$<1.18 \times 10^{-3}$	90	1	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

¹ This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 1.0 \times 10^{-3}$ using a photon pole amplitude model.

 $\Gamma(\pi^+ \pi^- \pi^0 \mu^+ \mu^-)/\Gamma_{\text{total}}$ Γ_{258}/Γ

A test for the $\Delta C=1$ weak neutral current. Allowed by higher-order electroweak interactions.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<8.1 \times 10^{-4}$	90	1	KODAMA	95	E653 π^- emulsion 600 GeV

 $\Gamma(\mu^\pm e^\mp)/\Gamma_{\text{total}}$ Γ_{259}/Γ

A test of lepton family number conservation.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 2.6 \times 10^{-7}$	90		PETRIC	10	BELL $e^+ e^- \approx \gamma(4S)$

NODE=S032R70

NODE=S032R70

NODE=S032R70

NODE=S032B96

NODE=S032B96

NODE=S032B96

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NODE=S032B97

NODE=S032B97

NODE=S032B97

NODE=S032R46

NODE=S032R46

NODE=S032R46

• • • We do not use the following data for averages, fits, limits, etc. • • •

$< 3.3 \times 10^{-7}$	90	2	LEES	12Q	BABR	$e^+ e^- \approx 10.58 \text{ GeV}$
$< 8.1 \times 10^{-7}$	90	0	AUBERT,B	04Y	BABR	$e^+ e^- \approx \gamma(4S)$
$< 1.72 \times 10^{-5}$	90		PRIPSTEIN	00	E789	ρ nucleus, 800 GeV
$< 8.1 \times 10^{-6}$	90		ITALA	99G	E791	$\pi^- N$ 500 GeV
$< 1.9 \times 10^{-5}$	90	2	¹ FREYBERGER	96	CLE2	$e^+ e^- \approx \gamma(4S)$
$< 1.0 \times 10^{-4}$	90	4	ALBRECHT	88G	ARG	$e^+ e^-$ 10 GeV
$< 2.7 \times 10^{-4}$	90	9	HAAS	88	CLEO	$e^+ e^-$ 10 GeV
$< 1.2 \times 10^{-4}$	90		BECKER	87C	MRK3	$e^+ e^-$ 3.77 GeV
$< 9 \times 10^{-4}$	90		PALKA	87	SILI	200 GeV πp
$< 21 \times 10^{-4}$	90	0	² RILES	87	MRK2	$e^+ e^-$ 29 GeV

¹This is the corrected result given in the erratum to FREYBERGER 96.

²RILES 87 assumes $B(D \rightarrow K\pi) = 3.0\%$ and has production model dependency.

$\Gamma(\pi^0 e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{260}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 8.6 \times 10^{-5}$	90	2	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

$\Gamma(\eta e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{261}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 1.0 \times 10^{-4}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

$\Gamma(\pi^+ \pi^- e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{262}/Γ

A test of lepton family-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 1.5 \times 10^{-5}$	90	1	ITALA	01C E791	π^- nucleus, 500 GeV

$\Gamma(\rho^0 e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{263}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 4.9 \times 10^{-5}$	90	0	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$< 6.6 \times 10^{-5}$	90	1	ITALA	01C E791	π^- nucleus, 500 GeV
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¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 5.0 \times 10^{-5}$ using a photon pole amplitude model.

$\Gamma(\omega e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{264}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 1.2 \times 10^{-4}$	90	0	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

¹This FREYBERGER 96 limit is obtained using a phase-space model. The same limit is obtained using a photon pole amplitude model.

$\Gamma(K^- K^+ e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{265}/Γ

A test of lepton family-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 1.8 \times 10^{-4}$	90	5	ITALA	01C E791	π^- nucleus, 500 GeV

$\Gamma(\phi e^\pm \mu^\mp)/\Gamma_{\text{total}}$

Γ_{266}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$< 3.4 \times 10^{-5}$	90	0	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$< 4.7 \times 10^{-5}$	90	0	ITALA	01C E791	π^- nucleus, 500 GeV
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¹This FREYBERGER 96 limit is obtained using a phase-space model. The limit changes to $< 3.3 \times 10^{-5}$ using a photon pole amplitude model.

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NODE=S032C22
NODE=S032C22

NODE=S032C22

NODE=S032S57
NODE=S032S57

NODE=S032S57

NODE=S032S57;LINKAGE=FB

$\Gamma(K^0 e^\pm \mu^\mp)/\Gamma_{\text{total}}$ Γ_{267}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.0 \times 10^{-4}$	90	0	FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$

 $\Gamma(K^- \pi^+ e^\pm \mu^\mp)/\Gamma_{\text{total}}$ Γ_{268}/Γ

A test of lepton family-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<5.53 \times 10^{-4}$	90	15	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\bar{K}^*(892)^0 e^\pm \mu^\mp)/\Gamma_{\text{total}}$ Γ_{269}/Γ

A test of lepton family number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<8.3 \times 10^{-5}$	90	9	AITALA	01C E791	π^- nucleus, 500 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

$<1.0 \times 10^{-4}$	90	0	¹ FREYBERGER 96	CLE2	$e^+ e^- \approx \gamma(4S)$
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¹This FREYBERGER 96 limit is obtained using a phase-space model. The same limit is obtained using a photon pole amplitude model.

 $\Gamma(2\pi^- 2e^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{270}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.12 \times 10^{-4}$	90	1	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(2\pi^- 2\mu^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{271}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.9 \times 10^{-5}$	90	1	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(K^- \pi^- 2e^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{272}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.06 \times 10^{-4}$	90	2	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(K^- \pi^- 2\mu^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{273}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<3.9 \times 10^{-4}$	90	14	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(2K^- 2e^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{274}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.52 \times 10^{-4}$	90	2	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(2K^- 2\mu^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{275}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<9.4 \times 10^{-5}$	90	1	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(\pi^- \pi^- e^+ \mu^+ + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{276}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<7.9 \times 10^{-5}$	90	4	AITALA	01C E791	π^- nucleus, 500 GeV

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NODE=S032C10

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NODE=S032C10

NODE=S032C11

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$\Gamma(K^-\pi^+\mu^++c.c.)/\Gamma_{\text{total}}$ Γ_{277}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.					
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<2.18 \times 10^{-4}$	90	7	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(2K^-\mu^++c.c.)/\Gamma_{\text{total}}$ Γ_{278}/Γ

A test of lepton-number conservation. The value is for the sum of the two charge states.					
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<5.7 \times 10^{-5}$	90	0	AITALA	01C E791	π^- nucleus, 500 GeV

 $\Gamma(pe^-)/\Gamma_{\text{total}}$ Γ_{279}/Γ

A test of baryon- and lepton-number conservation.					
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.0 \times 10^{-5}$	90	1	RUBIN	09	CLEO e^+e^- at $\psi(3770)$

1 This RUBIN 09 limit is for either $D^0 \rightarrow pe^-$ or $\bar{D}^0 \rightarrow pe^-$ decay. $\Gamma(\bar{p}e^+)/\Gamma_{\text{total}}$ Γ_{280}/Γ

A test of baryon- and lepton-number conservation.					
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$<1.1 \times 10^{-5}$	90	1	RUBIN	09	CLEO e^+e^- at $\psi(3770)$

1 This RUBIN 09 limit is for either $D^0 \rightarrow \bar{p}e^+$ or $\bar{D}^0 \rightarrow \bar{p}e^+$ decay. **D^0 CP-VIOLATING DECAY-RATE ASYMMETRIES**

This is the difference between D^0 and \bar{D}^0 partial widths for these modes divided by the sum of the widths. The D^0 and \bar{D}^0 are distinguished by the charge of the parent D^* : $D^{*+} \rightarrow D^0\pi^+$ and $D^{*-} \rightarrow \bar{D}^0\pi^-$.

 $A_{CP}(K^+K^-)$ in $D^0, \bar{D}^0 \rightarrow K^+K^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.21 ± 0.17 OUR AVERAGE				
-0.24 \pm 0.22 \pm 0.09	476k	1 AALTONEN	12B CDF	$p\bar{p}, \sqrt{s}=1.96$ TeV
0.00 \pm 0.34 \pm 0.13	129k	2 AUBERT	08M BABR	$e^+e^- \approx 10.6$ GeV
-0.43 \pm 0.30 \pm 0.11	120k	3 STARIC	08 BELL	$e^+e^- \approx \gamma(4S)$
+2.0 \pm 1.2 \pm 0.6		4 ACOSTA	05C CDF	$p\bar{p}, \sqrt{s}=1.96$ TeV
0.0 \pm 2.2 \pm 0.8	3023	4 CSORNA	02 CLE2	$e^+e^- \approx \gamma(4S)$
-0.1 \pm 2.2 \pm 1.5	3330	4 LINK	00B FOCS	
-1.0 \pm 4.9 \pm 1.2	609	4 AITALA	98C E791	$-0.093 < A_{CP} < +0.073$ (90% CL)

1 See also " D^0 CP-violating asymmetry differences" at the end of the CP-violating asymmetries.2 AUBERT 08M uses corrected numbers of events directly, not ratios with $K^\mp\pi^\pm$ events.3 STARIC 08 uses $D^0 \rightarrow K^-\pi^+$ and $\bar{D}^0 \rightarrow K^+\pi^-$ decays to correct for detector-induced asymmetries.4 AITALA 98C, LINK 00B, CSORNA 02, and ACOSTA 05C measure $N(D^0 \rightarrow K^+K^-)/N(D^0 \rightarrow K^-\pi^+)$, the ratio of numbers of events observed, and similarly for the \bar{D}^0 . $A_{CP}(K_S^0K_S^0)$ in $D^0, \bar{D}^0 \rightarrow K_S^0K_S^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-23 ± 19	65	BONVICINI	01 CLE2	$e^+e^- \approx 10.6$ GeV

 $A_{CP}(\pi^+\pi^-)$ in $D^0, \bar{D}^0 \rightarrow \pi^+\pi^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.22 ± 0.21 OUR AVERAGE				
+0.22 \pm 0.24 \pm 0.11	215k	1 AALTONEN	12B CDF	$p\bar{p}, \sqrt{s}=1.96$ TeV
-0.24 \pm 0.52 \pm 0.22	63.7k	2 AUBERT	08M BABR	$e^+e^- \approx 10.6$ GeV
+0.43 \pm 0.52 \pm 0.12	51k	3 STARIC	08 BELL	$e^+e^- \approx \gamma(4S)$
+1.0 \pm 1.3 \pm 0.6		4 ACOSTA	05C CDF	$p\bar{p}, \sqrt{s}=1.96$ TeV
+1.9 \pm 3.2 \pm 0.8	1136	4 CSORNA	02 CLE2	$e^+e^- \approx \gamma(4S)$
+4.8 \pm 3.9 \pm 2.5	1177	4 LINK	00B FOCS	
-4.9 \pm 7.8 \pm 3.0	343	4 AITALA	98C E791	$-0.186 < A_{CP} < +0.088$ (90% CL)

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NODE=S032C04

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NODE=S032A8

NODE=S032A8

NODE=S032A4

NODE=S032A4

¹ See also " D^0 CP-violating asymmetry differences" at the end of the CP-violating asymmetries.

² AUBERT 08M uses corrected numbers of events directly, not ratios with $K^\mp\pi^\pm$ events.

³ STARIC 08 uses $D^0 \rightarrow K^-\pi^+$ and $\bar{D}^0 \rightarrow K^+\pi^-$ decays to correct for detector-induced asymmetries.

⁴ AITALA 98c, LINK 00B, CSORNA 02, and ACOSTA 05C measure $N(D^0 \rightarrow \pi^+\pi^-)/N(D^0 \rightarrow K^-\pi^+)$, the ratio of numbers of events observed, and similarly for the \bar{D}^0 .

$A_{CP}(\pi^0\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \pi^0\pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
+0.1 ± 4.8	810	BONVICINI	01	CLE2 $e^+e^- \approx 10.6$ GeV

$A_{CP}(\pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \pi^+\pi^-\pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.3 ± 0.4 OUR AVERAGE				
+0.43 ± 1.30	123k ± 490	ARINSTEIN	08	BELL $e^+e^- \approx \gamma(4S)$
+0.31 ± 0.41 ± 0.17	80 ± .3k	AUBERT	08AO BABR	$e^+e^- \approx 10.6$ GeV
+1 ± 9 -7 ± 5		CRONIN-HEN..05	CLEO	$e^+e^- \approx 10$ GeV

$A_{CP}(\rho(770)^+\pi^- \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho^+\pi^-, \bar{D}^0 \rightarrow \rho^-\pi^+$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+1.2 ± 0.8 ± 0.3	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(770)^0\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \rho^0\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-3.1 ± 2.7 ± 1.2	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(770)^-\pi^+ \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho^-\pi^+, \bar{D}^0 \rightarrow \rho^+\pi^-$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-1.0 ± 1.6 ± 0.7	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1450)^+\pi^- \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho(1450)^+\pi^-, \bar{D}^0 \rightarrow$ c.c.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
0 ± 50 ± 50	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1450)^0\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \rho(1450)^0\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-17 ± 33 ± 17	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1450)^-\pi^+ \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho(1450)^-\pi^+, \bar{D}^0 \rightarrow$ c.c.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+6 ± 8 ± 3	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1700)^+\pi^- \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho(1700)^+\pi^-, \bar{D}^0 \rightarrow$ c.c.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-5 ± 13 ± 5	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1700)^0\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \rho(1700)^0\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+13 ± 8 ± 3	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(\rho(1700)^-\pi^+ \rightarrow \pi^+\pi^-\pi^0)$ in $D^0 \rightarrow \rho(1700)^-\pi^+, \bar{D}^0 \rightarrow$ c.c.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+8 ± 10 ± 5	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(f_0(980)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_0(980)\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
0 ± 25 ± 25	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(f_0(1370)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_0(1370)\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+25 ± 13 ± 13	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

$A_{CP}(f_0(1500)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_0(1500)\pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
0 ± 13 ± 13	AUBERT	08AO BABR	Table 1, -Col.5/2 × Col.2

NODE=S032A4;LINKAGE=AA

NODE=S032A4;LINKAGE=AU

NODE=S032A4;LINKAGE=ST

NODE=S032A4;LINKAGE=A

NODE=S032A7

NODE=S032A7

NODE=S032A12

NODE=S032A12

NODE=S032A25

NODE=S032A25

NODE=S032A26

NODE=S032A26

NODE=S032A27

NODE=S032A27

NODE=S032A28

NODE=S032A28

NODE=S032A29

NODE=S032A29

NODE=S032A30

NODE=S032A30

NODE=S032A31

NODE=S032A31

NODE=S032A32

NODE=S032A32

NODE=S032A33

NODE=S032A33

NODE=S032A34

NODE=S032A34

NODE=S032A35

NODE=S032A35

NODE=S032A36

NODE=S032A36

$A_{CP}(f_0(1710)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_0(1710)\pi^0$				NODE=S032A37 NODE=S032A37
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
0±17±17	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(f_2(1270)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_2(1270)\pi^0$				NODE=S032A38 NODE=S032A38
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-4±4±4	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(\sigma(400)\pi^0 \rightarrow \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \sigma(400)\pi^0$				NODE=S032A39 NODE=S032A39
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
+6±6±6	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(\text{nonresonant } \pi^+\pi^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \text{nonresonant } \pi^+\pi^-\pi^0$				NODE=S032A40 NODE=S032A40
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-13±19±13	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(K^+K^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow K^+K^-\pi^0$				NODE=S032A41 NODE=S032A41
VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-1.00±1.67±0.25	$11 \pm 0.11k$	AUBERT	08AO BABR	$e^+e^- \approx 10.6 \text{ GeV}$
$A_{CP}(K^*(892)^+K^- \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow K^*(892)^+K^-, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A42 NODE=S032A42
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-0.9±1.2±0.4	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(K^*(1410)^+K^- \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow K^*(1410)^+K^-, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A43 NODE=S032A43
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-21±23±8	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}((K^+\pi^0)_{S\text{-wave}}K^- \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow (K^+\pi^0)_SK^-, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A44 NODE=S032A44
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
+7±15±3	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(\phi(1020)\pi^0 \rightarrow K^+K^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow \phi(1020)\pi^0$				NODE=S032A45 NODE=S032A45
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
+1.1±2.1±0.5	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(f_0(980)\pi^0 \rightarrow K^+K^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f_0(980)\pi^0$				NODE=S032A46 NODE=S032A46
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-3±19±1	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(a_0(980)^0\pi^0 \rightarrow K^+K^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow a_0(980)^0\pi^0$				NODE=S032A47 NODE=S032A47
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-5±16±2	¹ AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
¹ This AUBERT 08AO value is obtained when the $a_0(980)^0$ replaces the $f_0(980)$ in the fit.				
$A_{CP}(f'_2(1525)\pi^0 \rightarrow K^+K^-\pi^0)$ in $D^0, \bar{D}^0 \rightarrow f'_2(1525)\pi^0$				NODE=S032A48 NODE=S032A48
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
0±50±150	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(K^*(892)^-K^+ \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow K^*(892)^-K^+, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A49 NODE=S032A49
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-5±4±1	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}(K^*(1410)^-K^+ \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow K^*(1410)^-K^+, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A50 NODE=S032A50
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-17±28±7	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	
$A_{CP}((K^-\pi^0)_{S\text{-wave}}K^+ \rightarrow K^+K^-\pi^0)$ in $D^0 \rightarrow (K^-\pi^0)_SK^+, \bar{D}^0 \rightarrow \text{c.c.}$				NODE=S032A51 NODE=S032A51
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
-7±40±8	AUBERT	08AO BABR	Table 1, —Col.5/2×Col.2	

$A_{CP}(K_S^0 \pi^0)$ in $D^0, \bar{D}^0 \rightarrow K_S^0 \pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.27±0.21 OUR AVERAGE				
-0.28±0.19±0.10	326k	KO	11	BELL $e^+ e^- \approx \gamma(4S)$
+0.1 ± 1.3	9099	BONVICINI	01	CLE2 $e^+ e^- \approx 10.6 \text{ GeV}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
-1.8 ± 3.0		BARTEL	95	CLE2 See BONVICINI 01

NODE=S032A3
NODE=S032A3 $A_{CP}(K_S^0 \eta)$ in $D^0, \bar{D}^0 \rightarrow K_S^0 \eta$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
+0.54±0.51±0.16	46k	KO	11	BELL $e^+ e^- \approx \gamma(4S)$

NODE=S032A52
NODE=S032A52 $A_{CP}(K_S^0 \eta')$ in $D^0, \bar{D}^0 \rightarrow K_S^0 \eta'$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
+0.98±0.67±0.14	27k	KO	11	BELL $e^+ e^- \approx \gamma(4S)$

NODE=S032A53
NODE=S032A53 $A_{CP}(K_S^0 \phi)$ in $D^0, \bar{D}^0 \rightarrow K_S^0 \phi$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-2.8±9.4	BARTEL	95	CLE2 $-18.2 < A_{CP} < +12.6\% \text{ (90\%CL)}$

NODE=S032A2
NODE=S032A2 $A_{CP}(K^\mp \pi^\pm)$ in $D^0 \rightarrow K^- \pi^+, \bar{D}^0 \rightarrow K^+ \pi^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.1±0.7 OUR AVERAGE				
+0.5±0.4±0.9	150k	MENDEZ	10	CLEO $e^+ e^- \text{ at } 3774 \text{ MeV}$
-0.4±0.5±0.9		DOBBS	07	CLEO $e^+ e^- \text{ at } \psi(3770)$

NODE=S032A23
NODE=S032A23 $A_{CP}(K^\pm \pi^\mp)$ in $D^0 \rightarrow K^+ \pi^-, \bar{D}^0 \rightarrow K^- \pi^+$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
2.2± 3.2 OUR AVERAGE				
- 2.1± 5.2±1.5	4030 ± 90	AUBERT	07W BABR	$e^+ e^- \approx 10.6 \text{ GeV}$
+ 2.3± 4.7	4024 ± 88	¹ ZHANG	06 BELL	$e^+ e^-$
+18 ±14 ±4		² LINK	05H FOCS	γ nucleus
+ 9.5± 6.1±8.3		³ AUBERT	03Z BABR	$e^+ e^-, 10.6 \text{ GeV}$
+ 2 ⁺¹⁹ -20 ±1	45	⁴ GODANG	00 CLE2	$-0.43 < A_{CP} < +0.34 \text{ (95\%CL)}$

NODE=S032A5
NODE=S032A5

• • • We do not use the following data for averages, fits, limits, etc. • • •

- 8.0± 7.7	845 ± 40	⁵ LI	05A BELL	See ZHANG 06
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1 This ZHANG 06 result allows mixing.

2 This LINK 05H result assumes no mixing. If mixing is allowed, it becomes $0.13^{+0.33}_{-0.25} \pm 0.10$.3 This AUBERT 03Z limit assumes no mixing. If mixing is allowed, the 95% confidence-level interval is $(-2.8 < A_D < 4.9) \times 10^{-3}$.4 This GODANG 00 result assumes no $D^0-\bar{D}^0$ mixing; it becomes $-0.01^{+0.16}_{-0.17} \pm 0.01$ when mixing is allowed.

5 This LI 05A result allows mixing.

NODE=S032A5;LINKAGE=ZH

NODE=S032A5;LINKAGE=LI

NODE=S032A5;LINKAGE=AU

NODE=S032A5;LINKAGE=A

NODE=S032A5;LINKAGE=LA

NODE=S032A6

NODE=S032A6

 $A_{CP}(K^\mp \pi^\pm \pi^0)$ in $D^0 \rightarrow K^- \pi^+ \pi^0, \bar{D}^0 \rightarrow K^+ \pi^- \pi^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
0.2±0.9 OUR AVERAGE			
+0.2±0.4±0.8	DOBBS	07 CLEO	$e^+ e^- \text{ at } \psi(3770)$
-3.1±8.6	¹ KOPP	01 CLE2	$e^+ e^- \approx 10.6 \text{ GeV}$

NODE=S032A6;LINKAGE=K

¹ KOPP 01 fits separately the D^0 and \bar{D}^0 Dalitz plots and then calculates the integrated difference of normalized densities divided by the integrated sum. $A_{CP}(K^\pm \pi^\mp \pi^0)$ in $D^0 \rightarrow K^+ \pi^- \pi^0, \bar{D}^0 \rightarrow K^- \pi^+ \pi^0$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0 ± 5 OUR AVERAGE				
-0.6± 5.3	1978 ± 104	TIAN	05 BELL	$e^+ e^- \approx \gamma(4S)$
+9 ⁺²⁵ -22	38	BRANDENB...	01 CLE2	$e^+ e^- \approx \gamma(4S)$

NODE=S032A9

NODE=S032A9

$A_{CP}(K_S^0 \pi^+ \pi^-)$ in $D^0, \bar{D}^0 \rightarrow K_S^0 \pi^+ \pi^-$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.1 ± 0.8 OUR AVERAGE				
[(-0.9 ^{+2.6} _{-6.0})% OUR 2012 AVERAGE]				
-0.05 ± 0.57 ± 0.54	350k	¹ AALTONEN	12AD CDF	
-0.9 ± 2.1 ^{+1.6} _{-5.7}	4854	² ASNER	04A CLEO	$e^+ e^- \approx 10 \text{ GeV}$

¹ This is the overall result of AALTONEN 12AD. Following are the 15 CP fit-fraction asymmetries from the amplitude analysis of the D^0 and $\bar{D}^0 \rightarrow K_S^0 \pi^+ \pi^-$ Dalitz plots.

² This is the overall result of ASNER 04A; CP-violating limits are also given below for each of the 10 resonant submodes found in an amplitude analysis of the D^0 and $\bar{D}^0 \rightarrow K_S^0 \pi^+ \pi^-$ Dalitz plots.

 $A_{CP}(K^*(892)^\mp \pi^\pm \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow K^{*-} \pi^+, \bar{D}^0 \rightarrow K^{*+} \pi^-$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+0.36 ± 0.33 ± 0.40	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
+2.5 ± 1.9 ^{+3.3} _{-0.8}	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K^*(892)^\pm \pi^\mp \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow K^{*+} \pi^-, \bar{D}^0 \rightarrow K^{*-} \pi^+$

This is a doubly Cabibbo-suppressed mode.			
VALUE (%)	DOCUMENT ID	TECN	COMMENT
+ 1.0 ± 5.7 ± 2.1	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
-21 ± 42 ± 28	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 \rho^0 \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow \bar{K}^0 \rho^0, \bar{D}^0 \rightarrow K^0 \rho^0$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-0.05 ± 0.50 ± 0.08	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
+3.1 ± 3.8 ^{+2.7} _{-2.2}	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 \omega \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow \bar{K}^0 \omega, \bar{D}^0 \rightarrow K^0 \omega$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-12.6 ± 6.0 ± 2.6	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
-26 ± 24 ⁺²² ₋₄	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 f_0(980) \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow \bar{K}^0 f_0(980), \bar{D}^0 \rightarrow K^0 f_0(980)$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-0.4 ± 2.2 ± 1.6	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
-4.7 ± 11.0 ^{+24.9} _{-8.8}	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 f_2(1270) \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow \bar{K}^0 f_2(1270), \bar{D}^0 \rightarrow K^0 f_2(1270)$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
- 4.0 ± 3.4 ± 3.0	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
+34 ± 51 ⁺³³ ₋₇₉	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 f_0(1370) \rightarrow K_S^0 \pi^+ \pi^-)$ in $D^0 \rightarrow \bar{K}^0 f_0(1370), \bar{D}^0 \rightarrow K^0 f_0(1370)$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
- 0.5 ± 4.6 ± 7.7	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts
• • • We do not use the following data for averages, fits, limits, etc. • • •			
+18 ± 10 ⁺¹³ ₋₂₂	ASNER	04A CLEO	Dalitz fit, 4854 evts

 $A_{CP}(K_S^0 \rho^0(1450))$ in $D^0 \rightarrow \bar{K}^0 \rho^0(1450), \bar{D}^0 \rightarrow K^0 \rho^0(1450)$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-4.1 ± 5.2 ± 8.1	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A10

NODE=S032A10

NEW

NODE=S032A10;LINKAGE=AL

NODE=S032A10;LINKAGE=AS

NODE=S032A13

NODE=S032A13

NODE=S032A14

NODE=S032A14

NODE=S032A14

NODE=S032A15

NODE=S032A15

NODE=S032A16

NODE=S032A16

NODE=S032A17

NODE=S032A17

NODE=S032A18

NODE=S032A18

NODE=S032A19

NODE=S032A19

NODE=S032A55

NODE=S032A55

$$A_{CP}(K_S^0 f_0(600)) \text{ in } D^0 \rightarrow \bar{K}^0 f_0(600), \bar{D}^0 \rightarrow K^0 f_0(600)$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-2.7±2.7±3.6	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A56
NODE=S032A56

$$A_{CP}(K_S^0 f_2(1270)) \text{ in } D^0 \rightarrow \bar{K}^0 f_2(1270), \bar{D}^0 \rightarrow K^0 f_2(1270)$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-6.8±7.6±3.8	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A57
NODE=S032A57

$$A_{CP}(K^*(1410)^{\mp}\pi^{\pm}) \text{ in } D^0 \rightarrow K^*(1410)^-\pi^+, \bar{D}^0 \rightarrow K^*(1410)^+\pi^-$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-2.3±5.7±6.4	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A54
NODE=S032A54

$$A_{CP}(K_0^*(1430)^{\mp}\pi^{\pm} \rightarrow K_S^0\pi^+\pi^-) \text{ in } D^0 \rightarrow K_0^*(1430)^-\pi^+, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+4.0± 2.4±3.8	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A20
NODE=S032A20

• • • We do not use the following data for averages, fits, limits, etc. • • •

$$-0.2\pm11.3^{+8.8}_{-5.0} \quad \text{ASNER} \quad 04A \quad \text{CLEO} \quad \text{Dalitz fit, 4854 evts}$$

$$A_{CP}(K_0^*(1430)^{\pm}\pi^{\mp}) \text{ in } D^0 \rightarrow K_0^*(1430)^+\pi^-, \bar{D}^0 \rightarrow K_0^*(1430)^-\pi^+$$

This is a doubly Cabibbo-suppressed mode.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+12±11±10	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A58
NODE=S032A58
NODE=S032A58

$$A_{CP}(K_2^*(1430)^{\mp}\pi^{\pm}) \text{ in } D^0 \rightarrow K_2^*(1430)^-\pi^+, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+2.9± 4.0± 4.1	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A21
NODE=S032A21

• • • We do not use the following data for averages, fits, limits, etc. • • •

$$-7 \pm 25^{+13}_{-26} \quad \text{ASNER} \quad 04A \quad \text{CLEO} \quad \text{Dalitz fit, 4854 evts}$$

$$A_{CP}(K_2^*(1430)^{\pm}\pi^{\mp}) \text{ in } D^0 \rightarrow K_2^*(1430)^+\pi^-, \bar{D}^0 \rightarrow K_2^*(1430)^-\pi^+$$

This is a doubly Cabibbo-suppressed mode.

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-10±14±29	AALTONEN	12AD CDF	Dalitz fit, ~ 350k evts

NODE=S032A59
NODE=S032A59
NODE=S032A59

$$A_{CP}(K^*(1680)^{\mp}\pi^{\pm}) \text{ in } D^0 \rightarrow K_S^0\pi^+\pi^- \text{ in } D^0 \rightarrow K^*(1680)^-\pi^+, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
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NODE=S032A22
NODE=S032A22

• • • We do not use the following data for averages, fits, limits, etc. • • •

$$-36\pm19^{+10}_{-35} \quad \text{ASNER} \quad 04A \quad \text{CLEO} \quad \text{Dalitz fit, 4854 evts}$$

$$A_{CP}(K^-\pi^+\pi^+\pi^-) \text{ in } D^0 \rightarrow K^-\pi^+\pi^+\pi^-, \bar{D}^0 \rightarrow K^+\pi^-\pi^-\pi^+$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
+0.7±0.5±0.9	DOBBS	07	CLEO e ⁺ e ⁻ at $\psi(3770)$

NODE=S032A24
NODE=S032A24

$$A_{CP}(K^{\pm}\pi^{\mp}\pi^+\pi^-) \text{ in } D^0 \rightarrow K^+\pi^-\pi^+\pi^-, \bar{D}^0 \rightarrow K^-\pi^+\pi^+\pi^-$$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-1.8±4.4	1721 ± 75	TIAN	05	BELL e ⁺ e ⁻ ≈ $\gamma(4S)$

NODE=S032A11
NODE=S032A11

$$A_{CP}(K^+K^-\pi^+\pi^-) \text{ in } D^0, \bar{D}^0 \rightarrow K^+K^-\pi^+\pi^-$$

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-8.2±5.6±4.7	828 ± 46	LINK	05E	FOCS γA , $\bar{E}_\gamma \approx 180$ GeV

NODE=S032CPK
NODE=S032CPK

$$A_{CP}(K_1^*(1270)^+K^- \rightarrow K^{*0}\pi^+K^-) \text{ in } D^0 \rightarrow K_1^*(1270)^+K^-, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-0.7±10.4	ARTUSO	12	CLEO Amplitude fit, 2959 evts.

NODE=S032A60
NODE=S032A60

$$A_{CP}(K_1^*(1270)^-K^+ \rightarrow \bar{K}^{*0}\pi^-K^+) \text{ in } D^0 \rightarrow K_1^*(1270)^-K^+, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-10.0±31.5	ARTUSO	12	CLEO Amplitude fit, 2959 evts.

NODE=S032A61
NODE=S032A61

$$A_{CP}(K_1^*(1270)^+K^- \rightarrow \rho^0 K^+K^-) \text{ in } D^0 \rightarrow K_1^*(1270)^+K^-, \bar{D}^0 \rightarrow \text{c.c.}$$

VALUE (%)	DOCUMENT ID	TECN	COMMENT
-6.5±16.9	ARTUSO	12	CLEO Amplitude fit, 2959 evts.

NODE=S032A62
NODE=S032A62

$A_{CP}(K_1^*(1270)^- K^+ \rightarrow \rho^0 K^- K^+)$ in $D^0 \rightarrow K_1^*(1270)^- K^+, \bar{D}^0 \rightarrow \text{c.c.}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A63 NODE=S032A63
+9.6±12.9	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(K^*(1410)^+ K^- \rightarrow K^{*0} \pi^+ K^-)$ in $D^0 \rightarrow K^*(1410)^+ K^-, \bar{D}^0 \rightarrow \text{c.c.}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A64 NODE=S032A64
-20.0±16.8	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(K^*(1410)^- K^+ \rightarrow \bar{K}^{*0} \pi^- K^+)$ in $D^0 \rightarrow K^*(1410)^- K^+, \bar{D}^0 \rightarrow \text{c.c.}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A65 NODE=S032A65
-1.1±13.7	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(K^{*0} \bar{K}^{*0} \text{ S-wave})$ in $D^0, \bar{D}^0 \rightarrow K^{*0} \bar{K}^{*0} \text{ S-wave}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A66 NODE=S032A66
+9.5±13.5	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(\phi \rho^0 \text{ S-wave})$ in $D^0, \bar{D}^0 \rightarrow \phi \rho^0 \text{ S-wave}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A67 NODE=S032A67
-2.7±5.3	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(\phi \rho^0 \text{ D-wave})$ in $D^0, \bar{D}^0 \rightarrow \phi \rho^0 \text{ D-wave}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A68 NODE=S032A68
-37.1±19.0	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}(\phi(\pi^+ \pi^-) \text{ S-wave})$ in $D^0, \bar{D}^0 \rightarrow \phi(\pi^+ \pi^-) \text{ S-wave}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A69 NODE=S032A69
-8.6±10.4	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	
$A_{CP}((K^-\pi^+) \text{ P-wave}, (K^+\pi^-) \text{ S-wave})$ in $D^0 \rightarrow (K^-\pi^+) \text{ P-wave}$ $(K^+\pi^-) \text{ S-wave}, \bar{D}^0 \rightarrow \text{c.c.}$	DOCUMENT ID	TECN	COMMENT	NODE=S032A70 NODE=S032A70
+2.7±10.6	ARTUSO	12	CLEO Amplitude fit, 2959 evts.	

D^0 CP-VIOLATING ASYMMETRY DIFFERENCES

$$\Delta A_{CP} = A_{CP}(K^+ K^-) - A_{CP}(\pi^+ \pi^-)$$

CP violation in these modes can come from the decay amplitudes (direct) and/or from mixing or interference of mixing and decay (indirect). The difference ΔA_{CP} is primarily sensitive to the direct component, and only retains a second-order dependence on the indirect component for measurements where the mean decay time of the $K^+ K^-$ and $\pi^+ \pi^-$ samples are not identical. The results below are averaged assuming the indirect component can be neglected.

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
-0.68±0.16 OUR AVERAGE				

[$(-0.65 \pm 0.18)\%$ OUR 2012 AVERAGE]

-0.82±0.21±0.11	AAIJ	12G	LHCb	Time-integrated
-0.62±0.21±0.10	AALTONEN	120	CDF	Time-integrated
+0.24±0.62±0.26	¹ AUBERT	08M	BABR	Time-integrated
-0.86±0.60±0.07	120k	STARIC	08	BELL

• • • We do not use the following data for averages, fits, limits, etc. • • •

-0.46±0.31±0.12	AALTONEN	12B	CDF	See AALTONEN 120
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¹ Calculated from the AUBERT 08M values of $A_{CP}(K^+ K^-)$ and $A_{CP}(\pi^+ \pi^-)$. The systematic error here combines the systematic errors in quadrature, and therefore somewhat over-estimates it.

D^0 - \bar{D}^0 T-VIOLATING DECAY-RATE ASYMMETRIES

D^0 and \bar{D}^0 are distinguished by the charge of the parent D^* : $D^{*+} \rightarrow D^0 \pi^+$ and $D^{*-} \rightarrow \bar{D}^0 \pi^-$. Assuming CPT is good, T violation implies CP violation.

$$A_{T\text{viol}}(K^+ K^- \pi^+ \pi^-)$$

$C_T \equiv \vec{p}_{K^+} \cdot (\vec{p}_{\pi^+} \times \vec{p}_{\pi^-})$ is a T -odd correlation of the K^+ , π^+ , and π^- momenta (evaluated in the D^0 rest frame) for the D^0 . $\bar{C}_T \equiv \vec{p}_{K^-} \cdot (\vec{p}_{\pi^-} \times \vec{p}_{\pi^+})$ is the corresponding quantity for the \bar{D}^0 .

$$A_T \equiv [\Gamma(C_T > 0) - \Gamma(C_T < 0)] / [\Gamma(C_T > 0) + \Gamma(C_T < 0)]$$

would, in the absence of strong phases, test for T violation in D^0 decays (the Γ 's are

NODE=S032247

NODE=S032DCP

NODE=S032DCP

NODE=S032DCP

NEW

NODE=S032DCP;LINKAGE=AU

NODE=S032242

NODE=S032242

NODE=S032TV0

NODE=S032TV0

partial widths). With

$\bar{A}_T \equiv [\Gamma(-\bar{C}_T > 0) - \Gamma(-\bar{C}_T < 0)] / [\Gamma(-\bar{C}_T > 0) + \Gamma(-\bar{C}_T < 0)]$,
the asymmetry $A_{T\text{viol}} \equiv \frac{1}{2}(A_T - \bar{A}_T)$ tests for T violation even with nonzero strong phases.

VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
+ 1.0 ± 5.1 ± 4.4	47k	DEL-AMO-SA..10	BABR	$e^+ e^- \approx 10.6 \text{ GeV}$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
+10 ± 57 ± 37	828 ± 46	LINK	05E FOCS	γ A, $\bar{E}_\gamma \approx 180 \text{ GeV}$

D^0 CPT-VIOLATING DECAY-RATE ASYMMETRIES

$A_{CPT}(K^\mp \pi^\pm)$ in $D^0 \rightarrow K^- \pi^+$, $\bar{D}^0 \rightarrow K^+ \pi^-$

$A_{CPT}(t)$ is defined in terms of the time-dependent decay probabilities $P(D^0 \rightarrow K^- \pi^+)$ and $\bar{P}(\bar{D}^0 \rightarrow K^+ \pi^-)$ by $A_{CPT}(t) = (\bar{P} - P)/(\bar{P} + P)$. For small mixing parameters $x \equiv \Delta m/\Gamma$ and $y \equiv \Delta\Gamma/2\Gamma$ (as is the case), and times t , $A_{CPT}(t)$ reduces to $[y \operatorname{Re} \xi - x \operatorname{Im} \xi] / \Gamma t$, where ξ is the CPT-violating parameter.

The following is actually $y \operatorname{Re} \xi - x \operatorname{Im} \xi$.

VALUE	DOCUMENT ID	TECN	COMMENT
0.0083 ± 0.0065 ± 0.0041	LINK	03B FOCS	γ nucleus, $\bar{E}_\gamma \approx 180 \text{ GeV}$

$D^0 \rightarrow K^*(892)^- \ell^+ \nu_\ell$ FORM FACTORS

$r_V \equiv V(0)/A_1(0)$ in $D^0 \rightarrow K^*(892)^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
1.71 ± 0.68 ± 0.34	LINK	05B FOCS	$K^*(892)^- \mu^+ \nu_\mu$

$r_2 \equiv A_2(0)/A_1(0)$ in $D^0 \rightarrow K^*(892)^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
0.91 ± 0.37 ± 0.10	LINK	05B FOCS	$K^*(892)^- \mu^+ \nu_\mu$

$D^0 \rightarrow K^- / \pi^- \ell^+ \nu_\ell$ FORM FACTORS

$f_+(0)$ in $D^0 \rightarrow K^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
0.727 ± 0.007 ± 0.009	AUBERT	07BG BABR	$K^- e^+ \nu_e$ 2-parameter fit

$f_+(0)|V_{cs}|$ in $D^0 \rightarrow K^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
0.726 ± 0.008 ± 0.004	BESSON	09 CLEO	$K^- e^+ \nu_e$ 3-parameter fit

$r_1 \equiv a_1/a_0$ in $D^0 \rightarrow K^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
-2.65 ± 0.34 ± 0.08	BESSON	09 CLEO	$K^- e^+ \nu_e$ 3-parameter fit

$r_2 \equiv a_1/a_0$ in $D^0 \rightarrow K^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
13 ± 9 ± 1	BESSON	09 CLEO	$K^- e^+ \nu_e$ 3-parameter fit

$f_+(0)|V_{cd}|$ in $D^0 \rightarrow \pi^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
0.152 ± 0.005 ± 0.001	BESSON	09 CLEO	$\pi^- e^+ \nu_e$ 3-parameter fit

$r_1 \equiv a_1/a_0$ in $D^0 \rightarrow \pi^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
-2.80 ± 0.49 ± 0.04	BESSON	09 CLEO	$\pi^- e^+ \nu_e$ 3-parameter fit

$r_2 \equiv a_1/a_0$ in $D^0 \rightarrow \pi^- \ell^+ \nu_\ell$

VALUE	DOCUMENT ID	TECN	COMMENT
6 ± 3 ± 0	BESSON	09 CLEO	$\pi^- e^+ \nu_e$ 3-parameter fit

NODE=S032TV0

NODE=S032244

NODE=S032CPT

NODE=S032CPT

NODE=S032CPT

NODE=S032260

NODE=S032FRV

NODE=S032FRV

NODE=S032FR2

NODE=S032FR2

NODE=S032255

NODE=S032FK3

NODE=S032FK3

NODE=S032FK0

NODE=S032FK0

NODE=S032FK1

NODE=S032FK1

NODE=S032FK2

NODE=S032FK2

NODE=S032FP0

NODE=S032FP0

NODE=S032FP1

NODE=S032FP1

NODE=S032FP2

NODE=S032FP2

D⁰ REFERENCES

			NODE=S032
AAIJ	13N	PRL 110 101802	R. Aaij <i>et al.</i> (LHCb Collab.) REFID=54959
LEES	13	PR D87 012004	J.P. Lees <i>et al.</i> (BABAR Collab.) REFID=54803
AAIJ	12G	PRL 108 111602	R. Aaij <i>et al.</i> (LHCb Collab.) REFID=54046
AAIJ	12K	JHEP 1204 129	R. Aaij <i>et al.</i> (LHCb Collab.) REFID=54115
AALTONEN	12AD	PR D86 032007	T. Aaltonen <i>et al.</i> (CDF Collab.) REFID=54369
AALTONEN	12B	PR D85 012009	T. Aaltonen <i>et al.</i> (CDF Collab.) REFID=54047
AALTONEN	12O	PR 109 111801	T. Aaltonen <i>et al.</i> (CDF Collab.) REFID=54244
ARTUSO	12	PR D85 122002	M. Artuso <i>et al.</i> (CLEO Collab.) REFID=54413
ASNER	12	PR D86 112001	D.M. Asner, et al. (CLEO Collab.) REFID=54796
INSLER	12	PR D85 092016	J. Insler <i>et al.</i> (CLEO Collab.) REFID=54409
LEES	12L	PR D85 091107	J.P. Lees <i>et al.</i> (BABAR Collab.) REFID=54379
LEES	12Q	PR D86 032001	J.P. Lees <i>et al.</i> (BABAR Collab.) REFID=54384
PDG	12	PR D86 010001	J. Beringer <i>et al.</i> (PDG Collab.) REFID=54066
KO	11	PRL 106 211801	B.R. Ko <i>et al.</i> (BELLE Collab.) REFID=16647
LOWREY	11	PR D84 092005	N. Lowrey <i>et al.</i> (CLEO Collab.) REFID=53879
AALTONEN	10X	PR D82 091105	T. Aaltonen <i>et al.</i> (CDF Collab.) REFID=53437
ANASHIN	10A	PL B686 84	V.V. Anashin <i>et al.</i> (VEPP-4M KEDR Collab.) REFID=53230
ASNER	10	PR D81 052007	D.M. Asner <i>et al.</i> (CLEO Collab.) REFID=53219
BHATTACHAR.	10A	PR D81 096008	B. Bhattacharya, C.-W. Chiang, J.L. Rosner (CHIC+) REFID=53402
DEL-AMO-SA...	10	PR D81 111103	P. del Amo Sanchez <i>et al.</i> (BABAR Collab.) REFID=53324
DEL-AMO-SA...	10D	PRL 105 081803	P. del Amo Sanchez <i>et al.</i> (BABAR Collab.) REFID=53370
MENDEZ	10	PR D81 052013	H. Mendez <i>et al.</i> (CLEO Collab.) REFID=53251
PETRIC	10	PR D81 091102	M. Petric <i>et al.</i> (BELLE Collab.) REFID=53336
AUBERT	09AI	PR D80 071103	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=53067
AUBERT	09AN	PRL 103 211801	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=53082
BESSON	09	PR D80 032005	D. Besson <i>et al.</i> (CLEO Collab.) REFID=52963
Also		PR D79 052010	J.Y. Ge <i>et al.</i> (CLEO Collab.) REFID=52823
LOWREY	09	PR D80 031105	N. Lowrey <i>et al.</i> (CLEO Collab.) REFID=53014
RUBIN	09	PR D79 097101	P. Rubin <i>et al.</i> (CLEO Collab.) REFID=52813
ZUPANC	09	PR D80 052006	A. Zupanc <i>et al.</i> (BELLE Collab.) REFID=53034
AALTONEN	08E	PR 100 121802	T. Aaltonen <i>et al.</i> (CDF Collab.) REFID=52205
ABLIKIM	08L	PL B665 16	M. Ablikim <i>et al.</i> (BES Collab.) REFID=52461
ARINSTEIN	08	PL B662 102	K. Arinstein <i>et al.</i> (BELLE Collab.) REFID=52245
ARTUSO	08	PR D77 092003	M. Artuso <i>et al.</i> (CLEO Collab.) REFID=52350
ASNER	08	PR D78 012001	D.M. Asner <i>et al.</i> (CLEO Collab.) REFID=52412
AUBERT	08AL	PR D78 034023	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52361
AUBERT	08AO	PR D78 051102	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52363
AUBERT	08AZ	PR D78 071101	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52510
AUBERT	08L	PRL 100 051802	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52213
AUBERT	08M	PRL 100 061803	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52216
AUBERT	08U	PR D78 011105	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52244
BITENC	08	PR D77 112003	U. Bitenc <i>et al.</i> (BELLE Collab.) REFID=52406
BONVICINI	08	PR D77 091106	G. Bonvicini <i>et al.</i> (CLEO Collab.) REFID=52349
DOBBS	08	PR D77 112005	S. Dobbs <i>et al.</i> (CLEO Collab.) REFID=52407
Also		PRL 100 251802	D. Cronin-Hennessy <i>et al.</i> (CLEO Collab.) REFID=52443
GASPERO	08	PR D78 014015	M. Gaspero <i>et al.</i> (ROMA, CINN, TELA) REFID=52507
HE	08	PRL 100 091801	Q. He <i>et al.</i> (CLEO Collab.) REFID=52215
PDG	08	PL B667 1	C. Amsler <i>et al.</i> (PDG Collab.) REFID=52166
STARIC	08	PL B670 190	M. Staric <i>et al.</i> (BELLE Collab.) REFID=52527
ABLIKIM	07G	PL B658 1	M. Ablikim <i>et al.</i> (BES Collab.) REFID=52031
ARTUSO	07A	PRL 99 191801	M. Artuso <i>et al.</i> (CLEO Collab.) REFID=52017
AUBERT	07AB	PR D76 014018	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51856
AUBERT	07BG	PR D76 052005	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51938
AUBERT	07BJ	PR 99 251801	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=52093
AUBERT	07T	PR D76 011102	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51726
AUBERT	07W	PRL 98 211802	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51754
CAWLFIELD	07	PRL 98 092002	C. Cawlfield <i>et al.</i> (CLEO Collab.) REFID=51659
DOBBS	07	PR D76 112001	S. Dobbs <i>et al.</i> (CLEO Collab.) REFID=52075
LINK	07A	PR D75 052003	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=51713
STARIC	07	PRL 99 211803	M. Staric <i>et al.</i> (BELLE Collab.) REFID=51755
ZHANG	07B	PRL 99 131803	L.M. Zhang <i>et al.</i> (BELLE Collab.) REFID=51926
ABLIKIM	06O	EPJ C47 31	M. Ablikim <i>et al.</i> (BES Collab.) REFID=51228
ABLIKIM	06U	PL B643 246	M. Ablikim <i>et al.</i> (BES Collab.) REFID=51495
ABULENCIA	06X	PR D74 031109	A. Abulencia <i>et al.</i> (CDF Collab.) REFID=51328
ADAM	06A	PRL 97 251801	N.E. Adam <i>et al.</i> (CLEO Collab.) REFID=51559
AUBERT,B	06N	PRL 97 221803	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51491
AUBERT,B	06X	PR D74 091102	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=51497
CAWLFIELD	06A	PR D74 031108	C. Cawlfield <i>et al.</i> (CLEO Collab.) REFID=51153
HUANG	06B	PR D74 112005	G.S. Huang <i>et al.</i> (CLEO Collab.) REFID=51590
PDG	06	JPG 33 1	W.-M. Yao <i>et al.</i> (PDG Collab.) REFID=51004
RUBIN	06	PRL 96 081802	P. Rubin <i>et al.</i> (CLEO Collab.) REFID=50981
WIDHALM	06	PRL 97 061804	L. Widhalm <i>et al.</i> (BELLE Collab.) REFID=51251
ZHANG	06	PRL 96 151801	L.M. Zhang <i>et al.</i> (BELLE Collab.) REFID=51105
ABLIKIM	05F	PL B622 6	M. Ablikim <i>et al.</i> (BES Collab.) REFID=50681
ABLIKIM	05P	PL B625 196	M. Ablikim <i>et al.</i> (BES Collab.) REFID=50879
ACOSTA	05C	PRL 94 122001	D. Acosta <i>et al.</i> (FNAL CDF Collab.) REFID=50588
ASNER	05	PR D72 012001	D.M. Asner <i>et al.</i> (CLEO Collab.) REFID=50704
AUBERT,B	05J	PR D72 052008	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=50824
BITENC	05	PR D72 071101	U. Bitenc <i>et al.</i> (BELLE Collab.) REFID=50909
CAWLFIELD	05	PR D71 077101	C. Cawlfield <i>et al.</i> (CLEO Collab.) REFID=50632
COAN	05	PRL 95 181802	T.E. Coan <i>et al.</i> (CLEO Collab.) REFID=50933
CRONIN-HEN...	05	PR D72 031102	D. Cronin-Hennessy <i>et al.</i> (CLEO Collab.) REFID=50571
HE	05	PRL 95 121801	Q. He <i>et al.</i> (CLEO Collab.) REFID=50924
Also		PRL 96 199903 (errat.)	Q. He <i>et al.</i> (CLEO Collab.) REFID=51211
HUANG	05	PRL 94 011802	G.S. Huang <i>et al.</i> (CLEO Collab.) REFID=50367
KAYIS-TOPAK,	05	PL B626 24	A. Kayis-Topaksu <i>et al.</i> (CERN CHORUS Collab.) REFID=50880
LI	05A	PRL 94 071801	J. Li <i>et al.</i> (BELLE Collab.) REFID=50574
LINK	05	PL B607 51	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50468
LINK	05A	PL B607 59	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50469
LINK	05B	PL B607 67	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50470
LINK	05E	PL B622 239	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50567
LINK	05G	PL B610 225	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50599
LINK	05H	PL B618 23	J.M. Link <i>et al.</i> (FNAL FOCUS Collab.) REFID=50653
ONENGUT	05	PL B613 105	G. Onengut <i>et al.</i> (CERN CHORUS Collab.) REFID=50600
TIAN	05	PRL 95 231801	X.C. Tian <i>et al.</i> (BELLE Collab.) REFID=50952
ABLIKIM	04C	PL B597 39	M. Ablikim <i>et al.</i> (BEPC BES Collab.) REFID=49985
ABT	04	PL B596 173	I. Abt <i>et al.</i> (HERA B Collab.) REFID=49981
ASNER	04A	PRL 97 091101	D.M. Asner <i>et al.</i> (CLEO Collab.) REFID=50238
AUBERT	04Q	PR D69 051101	B. Aubert <i>et al.</i> (BABAR Collab.) REFID=49954

AUBERT,B	04Q	PR D70 091102	B. Aubert <i>et al.</i>	(BABAR Collab.)	REFID=50239
AUBERT,B	04Y	PRL 93 191801	B. Aubert <i>et al.</i>	(BaBar Collab.)	REFID=50267
LINK	04B	PL B586 21	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=49883
LINK	04D	PL B586 191	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=49888
RUBIN	04	PRL 93 111801	P. Rubin <i>et al.</i>	(CLEO Collab.)	REFID=50076
TAJIMA	04	PRL 92 101803	O. Tajima <i>et al.</i>	(BELLE Collab.)	REFID=49723
ACOSTA	03F	PR D68 091101	D. Acosta <i>et al.</i>	(CDF Collab.)	REFID=49839
AUBERT	03P	PRL 91 121801	B. Aubert <i>et al.</i>	(BaBar Collab.)	REFID=49541
AUBERT	03Z	PRL 91 171801	B. Aubert <i>et al.</i>	(BaBar Collab.)	REFID=49688
COAN	03	PRL 90 101801	T.E. Coan <i>et al.</i>	(CLEO Collab.)	REFID=49297
LINK	03	PL B555 167	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=49254
LINK	03B	PL B556 7	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=49256
LINK	03G	PL B575 190	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=49684
ABE	02I	PRL 88 162001	K. Abe <i>et al.</i>	(KEK BELLE Collab.)	REFID=48665
CSORNA	02	PR D65 092001	S.E. Csorna <i>et al.</i>	(CLEO Collab.)	REFID=48661
LINK	02F	PL B537 192	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=48767
MURAMATSU	02	PRL 89 251802	H. Muramatsu <i>et al.</i>	(CLEO Collab.)	REFID=49081
	Also	PRL 90 099901 (errat)	H. Muramatsu <i>et al.</i>	(CLEO Collab.)	REFID=49385
AITALA	01C	PRL 86 3969	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=48121
AITALA	01D	PR D64 112003	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=48423
BONVICINI	01	PR D63 071101	G. Bonvicini <i>et al.</i>	(CLEO Collab.)	REFID=48101
BRANDENB...	01	PRL 87 071802	G. Brandenburg <i>et al.</i>	(CLEO Collab.)	REFID=48210
DYTMAN	01	PR D64 111101	S.A. Dytmann <i>et al.</i>	(CLEO Collab.)	REFID=48419
KOPP	01	PR D63 092001	S. Kopp <i>et al.</i>	(CLEO Collab.)	REFID=48134
KUSHNIR...	01	PRL 86 5243	A. Kushnirenko <i>et al.</i>	(FNAL SELEX Collab.)	REFID=48138
LINK	01	PRL 86 2955	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=48108
BAI	00C	PR D62 052001	J.Z. Bai <i>et al.</i>	(BEPC BES Collab.)	REFID=47694
GODANG	00	PRL 84 5038	R. Godang <i>et al.</i>	(CLEO Collab.)	REFID=47519
JUN	00	PRL 84 1857	S.Y. Jun <i>et al.</i>	(FNAL SELEX Collab.)	REFID=47502
LINK	00	PL B485 62	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=47717
LINK	00B	PL B491 232	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=47794
	Also	PL B495 443 (errat)	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)	REFID=47918
PRIPSTEIN	00	PR D61 032005	D. Pripstein <i>et al.</i>	(FNAL E789 Collab.)	REFID=47460
AITALA	99E	PRL 83 32	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=47030
AITALA	99G	PL B462 401	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=47185
BONVICINI	99	PRL 82 4586	G. Bonvicini <i>et al.</i>	(CLEO Collab.)	REFID=47018
AITALA	98	PR D57 13	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=45779
AITALA	98C	PL B421 405	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=45931
AITALA	98D	PL B423 185	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=45930
ARTUSO	98	PRL 80 3193	M. Artuso <i>et al.</i>	(CLEO Collab.)	REFID=45972
ASNER	98	PR D58 092001	D.M. Asner <i>et al.</i>	(CLEO Collab.)	REFID=46452
BARATE	98W	PL B436 211	R. Barate <i>et al.</i>	(ALEPH Collab.)	REFID=46160
COAN	98	PRL 80 1150	T.E. Coan <i>et al.</i>	(CLEO Collab.)	REFID=45872
PDG	98	EPJ C3 1	C. Caso <i>et al.</i>	(CLEO Collab.)	REFID=45838
ADAMOVICH	97	PL B408 469	M.I. Adamovich <i>et al.</i>	(CERN BEATRICE Collab.)	REFID=45587
BARATE	97C	PL B403 367	R. Barate <i>et al.</i>	(ALEPH Collab.)	REFID=45451
AITALA	96C	PRL 77 2384	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)	REFID=44928
ALBRECHT	96C	PL B374 249	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=44890
ALEXOPOU...	96	PRL 77 2380	T. Alexopoulos <i>et al.</i>	(FNAL E771 Collab.)	REFID=44927
ASNER	96B	PR D54 4211	D.M. Asner <i>et al.</i>	(CLEO Collab.)	REFID=44942
BARISH	96	PL B373 334	B.C. Barish <i>et al.</i>	(CLEO Collab.)	REFID=44679
FRABETTI	96B	PL B382 312	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=44852
FREYBERGER	96	PRL 76 3065	A. Freyberger <i>et al.</i>	(CLEO Collab.)	REFID=44694
	Also	PRL 77 2147 (erratum)	A. Freyberger <i>et al.</i>	(CLEO Collab.)	REFID=44939
KUBOTA	96B	PR D54 2994	Y. Kubota <i>et al.</i>	(CERN BEATRICE Collab.)	REFID=44353
ADAMOVICH	95	PL B353 563	M.I. Adamovich <i>et al.</i>	(CLEO Collab.)	REFID=44481
BARTELT	95	PR D52 4860	J.E. Bartelt <i>et al.</i>	(CLEO Collab.)	REFID=44414
BUTLER	95	PR D52 2656	F. Butler <i>et al.</i>	(FNAL E687 Collab.)	REFID=44359
FRABETTI	95C	PL B354 486	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=44574
FRABETTI	95G	PL B364 127	P.L. Frabetti <i>et al.</i>	(FNAL E653 Collab.)	REFID=44124
KODAMA	95	PL B345 85	K. Kodama <i>et al.</i>	(ARGUS Collab.)	REFID=43782
ALBRECHT	94	PL B324 249	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=44043
ALBRECHT	94F	PL B340 125	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=44156
ALBRECHT	94I	ZPHY C64 375	H. Albrecht <i>et al.</i>	(FNAL E687 Collab.)	REFID=43713
FRABETTI	94C	PL B321 295	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=43745
FRABETTI	94D	PL B323 459	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=43895
FRABETTI	94G	PL B331 217	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=44065
FRABETTI	94J	PL B340 254	P.L. Frabetti <i>et al.</i>	(FNAL E653 Collab.)	REFID=43969
KODAMA	94	PL B336 605	K. Kodama <i>et al.</i>	(FNAL E789 Collab.)	REFID=43860
MISHRA	94	PR D50 R9	C.S. Mishra <i>et al.</i>	(CLEO Collab.)	REFID=43571
AKERIB	93	PRL 71 3070	D.S. Akerib <i>et al.</i>	(ARGUS Collab.)	REFID=43377
ALBRECHT	93D	PL B308 435	H. Albrecht <i>et al.</i>	(FNAL E691 Collab.)	REFID=43332
ANJOS	93	PR D48 56	J.C. Anjos <i>et al.</i>	(CLEO Collab.)	REFID=43584
BEAN	93C	PL B317 647	A. Bean <i>et al.</i>	(FNAL E687 Collab.)	REFID=43534
FRABETTI	93I	PL B315 203	P.L. Frabetti <i>et al.</i>	(FNAL E653 Collab.)	REFID=43469
KODAMA	93B	PL B313 260	K. Kodama <i>et al.</i>	(CLEO Collab.)	REFID=43546
PROCARIO	93B	PR D48 4007	M. Procario <i>et al.</i>	(CLEO Collab.)	REFID=43509
SELEN	93	PRL 71 1973	M.A. Selen <i>et al.</i>	(CERN WA82 Collab.)	REFID=42024
ADAMOVICH	92	PL B280 163	M.I. Adamovich <i>et al.</i>	(ARGUS Collab.)	REFID=43149
ALBRECHT	92B	ZPHY C56 7	H. Albrecht <i>et al.</i>	(FNAL E691 Collab.)	REFID=42039
ANJOS	92B	PR D46 R1	J.C. Anjos <i>et al.</i>	(FNAL E691 Collab.)	REFID=42102
ANJOS	92C	PR D46 1941	J.C. Anjos <i>et al.</i>	(ACCMOR Collab.)	REFID=42202
BARLAG	92C	ZPHY C55 383	S. Barlag <i>et al.</i>	(ACCMOR Collab.)	REFID=41313
	Also	ZPHY C48 29	S. Barlag <i>et al.</i>	(Mark III Collab.)	REFID=41921
COFFMAN	92B	PR D45 2196	D.M. Coffman <i>et al.</i>	(Mark III Collab.)	REFID=41038
	Also	PRL 64 2615	J. Adler <i>et al.</i>	(FNAL E687 Collab.)	REFID=42079
FRABETTI	92	PL B281 167	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=42124
FRABETTI	92B	PL B286 195	P.L. Frabetti <i>et al.</i>	(CERN NA14/2 Collab.)	REFID=41498
ALVAREZ	91B	ZPHY C50 11	M.P. Alvarez <i>et al.</i>	(CLEO Collab.)	REFID=41847
AMMAR	91	PR D44 3383	R. Ammar <i>et al.</i>	(FNAL-TPS Collab.)	REFID=41390
ANJOS	91	PR D43 6365	J.C. Anjos <i>et al.</i>	(FNAL-TPS Collab.)	REFID=41806
ANJOS	91D	PR D44 R3371	J.C. Anjos <i>et al.</i>	(Mark III Collab.)	REFID=41470
BAI	91	PRL 66 1011	Z. Bai <i>et al.</i>	(Mark III Collab.)	REFID=41470

COFFMAN	91	PL B263 135	D.M. Coffman <i>et al.</i>	(Mark III Collab.)	REFID=41541
CRAWFORD	91B	PR D44 3394	G. Crawford <i>et al.</i>	(CLEO Collab.)	REFID=41884
DECAMP	91J	PL B266 218	D. Decamp <i>et al.</i>	(ALEPH Collab.)	REFID=41614
FRAZETTI	91	PL B263 584	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)	REFID=41570
KINOSHITA	91	PR D43 2836	K. Kinoshita <i>et al.</i>	(CLEO Collab.)	REFID=41500
KODAMA	91	PRL 66 1819	K. Kodama <i>et al.</i>	(FNAL E653 Collab.)	REFID=41477
ALBRECHT	90C	ZPHY C46 9	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=41223
ALEXANDER	90	PRL 65 1184	J. Alexander <i>et al.</i>	(CLEO Collab.)	REFID=41281
ALVAREZ	90	ZPHY C47 539	M.P. Alvarez <i>et al.</i>	(CERN NA14/2 Collab.)	REFID=41311
ANJOS	90D	PR D42 2414	J.C. Anjos <i>et al.</i>	(FNAL E691 Collab.)	REFID=41309
BARLAG	90C	ZPHY C46 563	S. Barlag <i>et al.</i>	(ACCMOR Collab.)	REFID=41097
ADLER	89	PRL 62 1821	J. Adler <i>et al.</i>	(Mark III Collab.)	REFID=40769
ADLER	89C	PR D40 906	J. Adler <i>et al.</i>	(Mark III Collab.)	REFID=40848
ALBRECHT	89D	ZPHY C43 181	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=40857
ANJOS	89F	PRL 62 1587	J.C. Anjos <i>et al.</i>	(FNAL E691 Collab.)	REFID=40783
ABACHI	88	PL B205 411	S. Abachi <i>et al.</i>	(HRS Collab.)	REFID=40398
ADLER	88	PR D37 2023	J. Adler <i>et al.</i>	(Mark III Collab.)	REFID=40371
ADLER	88C	PRL 60 89	J. Adler <i>et al.</i>	(Mark III Collab.)	REFID=40361
ALBRECHT	88G	PL B209 380	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=40650
ALBRECHT	88I	PL B210 267	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=40653
ANJOS	88C	PRL 60 1239	J.C. Anjos <i>et al.</i>	(FNAL E691 Collab.)	REFID=40548
BORTOLETTO	88	PR D37 1719	D. Bortoletto <i>et al.</i>	(CLEO Collab.)	REFID=40835
Also		PR D39 1471 (erratum)	D. Bortoletto <i>et al.</i>	(CLEO Collab.)	REFID=40834
HAAS	88	PRL 60 1614	P. Haas <i>et al.</i>	(CLEO Collab.)	REFID=40601
RAAB	88	PR D37 2391	J.R. Raab <i>et al.</i>	(FNAL E691 Collab.)	REFID=40355
ADAMOVICH	87	EPL 4 887	M.I. Adamovich <i>et al.</i>	(Photon Emulsion Collab.)	REFID=40292
ADLER	87	PL B196 107	J. Adler <i>et al.</i>	(Mark III Collab.)	REFID=40357
AGUILAR-...	87E	ZPHY C36 551	M. Aguilar-Benitez <i>et al.</i>	(LEBC-EHS Collab.)	REFID=40402
Also		ZPHY C40 321	M. Aguilar-Benitez <i>et al.</i>	(LEBC-EHS Collab.)	REFID=40699
AGUILAR-...	87F	ZPHY C36 559	M. Aguilar-Benitez <i>et al.</i>	(LEBC-EHS Collab.)	REFID=40403
Also		ZPHY C38 520 (erratum)	M. Aguilar-Benitez <i>et al.</i>	(LEBC-EHS Collab.)	REFID=40694
BARLAG	87B	ZPHY C37 17	S. Barlag <i>et al.</i>	(ACCMOR Collab.)	REFID=40401
BECKER	87C	PL B193 147	J.J. Becker <i>et al.</i>	(Mark III Collab.)	REFID=40365
Also		PL B198 590 (erratum)	J.J. Becker <i>et al.</i>	(Mark III Collab.)	REFID=40366
PALKA	87	PL B189 238	H. Palka <i>et al.</i>	(ACCMOR Collab.)	REFID=40364
RILES	87	PR D35 2914	K. Riles <i>et al.</i>	(Mark II Collab.)	REFID=40363
BAILEY	86	ZPHY C30 51	R. Bailey <i>et al.</i>	(ACCMOR Collab.)	REFID=11537
BEBEK	86	PRl 56 1893	C. Bebek <i>et al.</i>	(CLEO Collab.)	REFID=11540
LOUIS	86	PRl 56 1027	W.C. Louis <i>et al.</i>	(PRIN, CHIC, ISU)	REFID=11541
ALBRECHT	85B	PL 158B 525	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=11528
ALBRECHT	85F	PL 150B 235	H. Albrecht <i>et al.</i>	(ARGUS Collab.)	REFID=11527
AUBERT	85	PL 155B 461	J.J. Aubert <i>et al.</i>	(EMC Collab.)	REFID=11529
BALTRUSAITI...	85E	PRl 55 150	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)	REFID=11472
BENVENUTI	85	PL 158B 531	A.C. Benvenuti <i>et al.</i>	(BCDMS Collab.)	REFID=40517
ADAMOVICH	84B	PL 140B 123	M.I. Adamovich <i>et al.</i>	(CERN WA58 Collab.)	REFID=11520
DERRICK	84	PRL 53 1971	M. Derrick <i>et al.</i>	(HRS Collab.)	REFID=11467
SUMMERS	84	PRL 52 410	D.J. Summers <i>et al.</i>	(UCSB, CARL, COLO+)	REFID=11525
BAILEY	83B	PL 132B 237	R. Bailey <i>et al.</i>	(ACCMOR Collab.)	REFID=11518
BODEK	82	PL 113B 82	A. Bodek <i>et al.</i>	(ROCH, CIT, CHIC, FNAL+)	REFID=11514
FIORINO	81	LNC 30 166	A. Fiorino <i>et al.</i>	(Photon-Emul/Omega-Photon)	REFID=11510
SCHINDLER	81	PR D24 78	R.H. Schindler <i>et al.</i>	(Mark II Collab.)	REFID=11453
TRILLING	81	PRPL 75 57	G.H. Trilling	(LBL, UCB) J	REFID=11483
ASTON	80E	PL 94B 113	D. Aston <i>et al.</i>	(BONN, CERN, EPOL, GLAS+)	REFID=11497
AVERY	80	PRL 44 1309	P. Avery <i>et al.</i>	(ILL, FNAL, COLU)	REFID=11498
ZHOLENTZ	80	PL 96B 214	A.A. Zholents <i>et al.</i>	(NOVO)	REFID=10320
Also		SJNP 34 814	A.A. Zholents <i>et al.</i>	(NOVO)	REFID=10321
Translated from YAF 34 1471.					
ABRAMS	79D	PRL 43 481	G.S. Abrams <i>et al.</i>	(Mark II Collab.)	REFID=11492
ATIYA	79	PRL 43 414	M.S. Atiya <i>et al.</i>	(COLU, ILL, FNAL)	REFID=11494
BALTAY	78C	PRL 41 73	C. Baltay <i>et al.</i>	(COLU, BNL)	REFID=11489
VUILLEMINT	78	PRL 41 1149	V. Vuillemin <i>et al.</i>	(LGW Collab.)	REFID=11439
GOLDHABER	77	PL 69B 503	G. Goldhaber <i>et al.</i>	(Mark I Collab.)	REFID=11434
PERUZZI	77	PRL 39 1301	I. Peruzzi <i>et al.</i>	(LGW Collab.)	REFID=11435
PICCOLO	77	PL 70B 260	M. Piccolo <i>et al.</i>	(Mark I Collab.)	REFID=11436
GOLDHABER	76	PRL 37 255	G. Goldhaber <i>et al.</i>	(Mark I Collab.)	REFID=22872

OTHER RELATED PAPERS

RICHMAN	95	RMP 67 893	J.D. Richman, P.R. Burchat	(UCSB, STAN)	REFID=44678
ROSNER	95	CNPP 21 369	J. Rosner	(CHIC)	REFID=44566